

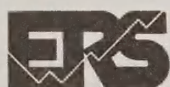
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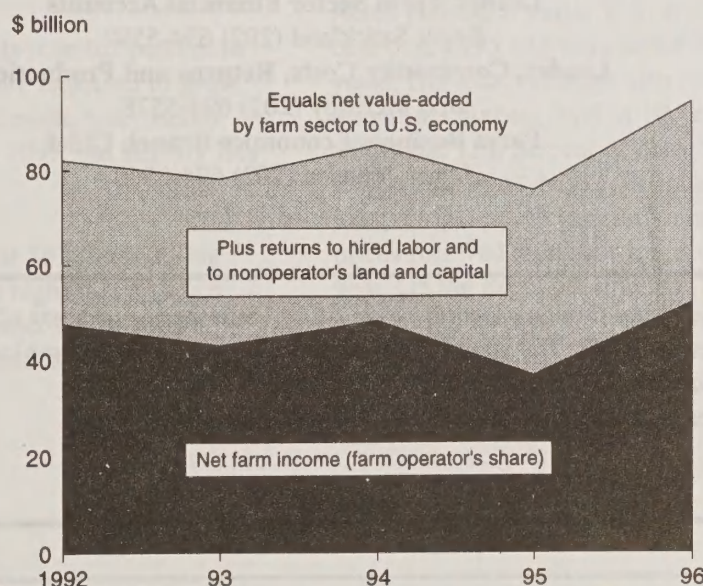
# Agricultural Income and Finance

## Situation and Outlook Report

1997 NOV 20 P 8:12

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**Net value-added by farm sector, shares to farm operator  
and nonoperator participants, 1992-96**  
*Farm operator and nonoperator participants all shared  
in increased value-added for 1996*





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## Summary

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### ***Agriculture Likely To Produce Strong 1997 Income—Though Earnings Are Not Expected To Equal 1996 Record***

The Economic Research Service forecasts farm net cash income in 1997 to be \$54.7 billion, close to the 1990-96 average, but down from the nearly \$60 billion record for 1996. Net farm income, which includes changes in farm inventories, is forecast to be \$45.9 billion, close to its 1990-96 average, which follows a record \$52 billion for 1996. Farmers will earn slightly less from 1997 crop sales than the record \$109 billion for 1996 due to expected lower feed grain prices.

Livestock receipts in 1997 will increase from the \$93-billion attained in 1996. Higher beef cattle prices—a product of reductions in the beef herd—will be the most important influence. This year should be the turnaround point after 3 years of steady declines in cattle and calf receipts. With hog production expected to be at least as high as in 1996, hog receipts in 1997 will exceed the \$12.6-billion achieved in 1996.

Total farm production expenses are forecast to increase less in 1997 than the 4-percent increase in 1996. Lower feed prices are the major factors dampening production expenses. Higher prices for labor and young livestock could be among the strongest upward pressures on farm expenses.

### ***Farm Assets, Debt, and Equity Keep Rising***

The value of farm sector business assets rose 6.2 percent in 1996 to \$1 trillion. Farm asset values are expected to grow another 4.5 percent in 1997. Farm real estate asset values are expected to continue increasing in 1997, but slightly less than in 1996.

Total farm business debt rose by almost \$6 billion during 1996, reaching nearly \$157 billion, its highest level since 1986. Total debt is forecast to rise another \$5 billion in 1997. Reduced incomes and slightly less favorable interest

rates in 1997 suggest that some farmers may find it more difficult to service higher debt levels. However, there is little evidence that growing debt in 1997 will precipitate widespread financial stress in the sector.

The value of farm business equity has risen for more than a decade. Significant gains are expected in 1997 as farm asset values rise faster than farm debt. Farm sector equity in 1997 is expected to be almost \$100 billion more than in 1995, and over \$300 billion greater than in 1985.

### ***Final Estimates Show Net Value-Added and Net Farm Income Attained New Highs in 1996***

Net value-added and net farm income reached record levels in 1996, rising substantially from 1995. Net value-added for 1996 was \$19.1 billion more than in 1995, a rise of 25 percent, and \$9.5 billion greater than its previous high in 1994. The \$22.6-billion rise in final output far exceeded the \$3.4-billion in out-of-pocket costs, resulting in considerably more income to be distributed among the farm operators, farm employees, lenders, and landlords who provide resources to the farm sector. Net farm income, that portion of net value-added earned by farm operators, jumped \$15.4 billion from 1995 to 1996.

### ***Although Input Expenses Were Higher In 1996, Strong Market Prices Led to Higher Net Returns***

Acres planted to major U.S. crops in 1996 were up 5.1 percent over 1995 and were at the highest level in over 10 years. Harvested acreage also rose (4.2 percent) and was also at the highest level in 10 years. Farmers planted an additional 11.6 percent of corn, 9.4 percent of wheat, and 2.6 percent of soybeans. Despite production increases for many crops, prices generally remained high. The overall prices received index for crops was up 12.5 percent for the year. On the expenses side, the 1996 prices paid index for general inputs rose 5.5 percent.



## Net Value-Added and Net Farm Income Attain New Highs in 1996

**Net value-added** and **net farm income** reached record levels in 1996, rising substantially from 1995 (table 1, table 2, and fig.1). **Net value-added** for 1996 was \$19.1 billion more than in 1995, up 25 percent, and \$9.5 billion greater than its previous high in 1994. Because net value-added represents the total value of the farm sector's output of goods and services, less payments to other (non-farm) sectors of the economy, it reflects production agriculture's addition to national output.<sup>1</sup> It also represents the sum of the economic returns to all the providers of factors of production: farm employees, lenders, landlords, and farm operators (fig.2).

The \$22.6-billion rise in final output far exceeded the \$3.4-billion in out-of-pocket costs represented by intermediate consumption outlays, resulting in \$19.1 billion more to be distributed among the providers of resources to the farm sector. As a consequence, hired workers received 6.1 percent more than in 1995 and lenders received an increase of 3.9 percent for their contributions to 1996 farm production. The earnings of non-operator landlords were up 19.3 percent, reflecting several factors. Holders of share-rent contracts benefitted from the additional \$17 billion in crop production. Indications are that the implementation of the Federal Agriculture Improvement and Reform Act of 1996 has resulted in two significant trends in rental arrangements. First, landlords are renegotiating contract terms and raising rents to reflect the value of the Government's payments and the certainty of the multi-year schedule of payments. Second, landlords are substituting cash leases for crop-share leases, obtaining higher rents and lessening the risk sharing.

**Net farm income**, which jumped \$15.4 billion from 1995 to 1996, is that portion of net value-added earned by farm operators (defined as those individuals and entities who share in the risks of production). In fact, the major share of the 1996 increment to net value-added accrued to farm operators. Typically it is the farm operators who benefit most from the increases and assimilate most of the declines arising from short term, unanticipated weather and market conditions. However, due to the rise in earnings of farm employees, lenders, and landlords, net farm income rose less in 1996 than the increase in overall net value-added (table 1-1, fig. 1-2).

**NOTE:** The *value-added format* is now used to present the agricultural sector income accounts for the United States and the States, replacing the traditional net farm income format. The underlying accounting concepts remain the same under the new format and *the value for net farm income is identical*.

The presence of more disaggregated components under the value-added format makes it much easier to discern what forces are driving the changes and trends in farm income. Changes in commodity production is the cause of most of the volatility in the income accounts, and much more detail is available to the reader in the value-added format. For example, the critical impact of the value of feed grain production on the gyrations in net farm income is clearly observable in the value-added format but not the previous presentation format. Likewise, the additional contributions in 1996 of soybeans, poultry, and dairy are clearly evident.

Perhaps most importantly, the value-added approach to sector accounting has the advantage of being the format accepted and utilized internationally, thereby enabling comparisons across countries, which became more important with the sweeping changes in federal agricultural programs enacted under the Federal Agriculture Improvement and Reform Act of 1996 (commonly called the 1996 Farm Bill). One feature of the 1996 Farm Act is the elimination of government controls on production as a requirement for federal support payments to farmers. Producer planting decisions will now be based on incentives from the marketplace, which is truly global in scope.

For those who may wish to verify or otherwise have a better understanding of the relationship between the new and old presentation formats, two tables providing a map of how to do a crosswalk between the two formats are available in the national farm income section of the ERS Home Page ([www.econ.ag.gov](http://www.econ.ag.gov)) or by requesting a copy from the Farm Sector Financial Accounts Team Leader call (202-694-5592).

**Net cash income** rose by \$8.8 billion, a 17.1-percent increase from 1995 to 1996 (table 1-3). Net cash income reflects the cash earnings generated by the farm business which are available for debt servicing, capital purchases, and distribution to farm households to cover family living expenses. Net cash income, unlike net farm income, does not include the value of home consumption, changes in inventories, capital replacement, and implicit rent or

<sup>1</sup>ERS value-added estimates are used by the Bureau of Economic Analysis (BEA) for the National Income and Product Accounts (see p.32 Agricultural Income and Finance, AIS-58, September 1995) and by OECD in their international agricultural accounts.



expenses related to the farm operator's dwelling, which do not reflect cash transactions during the current year.

Consequently, net cash income is more appropriate as an indicator of solvency than a measure of the value of the sector's output, which is viewed more accurately using either net value-added (for the sector) or net farm income (for operators). Net cash income exhibits less volatility than net farm income, as producers try to manage their cash flow to meet multiple objectives: payment of debt and family expenses, smoothing of year-to-year income fluctuations in order to minimize income taxes liabilities, and maximizing income by postponing sales in anticipation of higher prices or accelerating sales in anticipation of lower prices.

### ***Agricultural Sector Output 11 Percent Higher in 1996***

Final agricultural sector output, the value of the agricultural sector's output of commodities and services before expenses, rose \$22.6 billion in 1996 (table 1). Higher output, reduced by an increase in intermediate consumption outlays of \$3.4 billion, accounts for most of the \$19.1-billion jump in **net value-added**. The value of final 1996 crop output soared \$17 billion, reflecting rebounds in acreage and yield for major crops, both of which had declined in 1995, following 1994's record harvest (fig. 3). Crop prices were much higher in the first half of 1996 relative to the same period in the prior year and tended to remain stable in the latter half of the year, despite the rebound in production (figs. 7, 8, 9, 10). With the large harvest, farmers added \$4 billion of harvested crops to the end-of-year inventories for later sale. Inclusion of the inventory change enables a full accounting of a current year's production in the tabulation of the calendar year's farm sector output (table 1, figs. 1 and 2).

The total value of livestock production in 1996 was \$4.4 billion higher than the previous year, the first increase in 3 years (fig. 3). Substantial increases in the sales of hogs, poultry, and dairy products more than offset a \$4-billion decline in cattle production. Market prices available to farmers for hogs, poultry, and dairy were all up in 1996 (fig. 12). The \$4 billion fall in cattle production was a combination of declining receipts and a reduced national herd size. Total cattle receipts in 1996 declined from 1995 by \$2.9 billion in decreased value of sales and \$1.1 billion from a reduction in the herd (inventory adjustment). After having declined for the three prior years, beef prices stabilized near 1995 levels (fig. 11), but herd liquidation continued, as producers were caught in an ongoing cost-price squeeze without prospects of an immediate turnaround.

Production inputs purchased and utilized within the current production year, called **intermediate consumption outlays** in table 1, rose a modest \$3.4 billion (3.1 percent) in 1996. Changes in individual components were not particularly noteworthy but were consistent with adjustments occurring

in production. Livestock purchases were down, reflecting a continuation of the downturn in the beef cycle. Expenditures related to crop production were generally up, in line with the increase in acreage planted (table 1).

Net government transactions, the flow of funds between the agricultural and government sectors, fell to under a billion dollars in 1994. By 1995, this measure had fallen below \$100 million, and declined further to \$30 million in 1996. This decline reflects that the agricultural sector has recently paid government (mostly to state and local entities) nearly as much in taxes and fees as it received in (Federal) payments under various farm programs.

Net government transactions reached a recent high of \$11 billion in 1987 in the midst of the farm sector's financial crisis (fig. 6). The significant decline in this measure is a reflection of both the general decrease in government payments since 1987 (most of which were developed to support farm operator incomes), and the steady growth in licensing fees and property taxes collected from the agricultural sector. (Income taxes are not included in the accounts because they are not incurred in production.)

Government payments to the agricultural sector in 1996 had fallen to 44 percent of their record 1987 level, while the sector's payments to government entities reached 139 percent of their 1987 amount. Lower government payments in the 1990's (except for 1993) were due to the relatively high prices and low deficiency payments, partially the result of an expansion in demand, including growth in exports of agricultural commodities.

### ***Farm Marketing Receipts Up in 1996***

World economic growth and trade liberalization are providing increased opportunities for U.S. exports, and this environment has translated into strong export growth for the U.S. crop and livestock sectors in the 1990's (see box on U.S. agricultural exports). In 1996, the value of marketings of all farm commodities rose by \$14.6 billion (tables 1-4). Continuing an unbroken trend stretching back to 1987, cash receipts from sales of crops exceeded that of the previous year, having risen 42 percent since 1987. In contrast, livestock receipts also rose in 1996 by \$5.9 billion, after 2 years of decline (fig. 3). The increases in livestock receipts were powered by increases of \$3.3 billion and \$2.9 billion in sales of poultry and dairy products, respectively. Receipts from sales of meat animals declined slightly as a drop in cattle sales more than offset a \$2.4-billion rise in hog sales.

Strong growth in U.S. grain use supported commodity prices, and 1996 was a favorable year for feed crop farmers who planted more acres, benefitted from higher yields, and sold their production at high prices. Both domestic and export demand were strong with low carryin stocks. Corn and soybean sales were up an impressive \$2.9 billion and



## Agricultural Exports Surpass \$60 Billion

U.S. agricultural exports were a record \$60.4 billion in calendar year 1996, 8 percent higher than in 1995. Strong prices for grains and soybeans boosted bulk exports 12 percent to \$28.1 billion, the highest since 1981. High-value product (HVP) exports reached a record \$32.3 billion.

### Bulk Exports Led Growth in 1996

In 1996, bulk export growth accounted for much of the rise in U.S. agricultural exports. Even though export volume declined, higher grain and soybean prices boosted the export value to \$28.1 billion. Corn export volume fell 13 percent, but increased prices raised the value 15 percent. Wheat shipments also declined, but export value surged 15 percent due to higher prices caused by tight supplies. Soybean volume, unlike grains, rose 12 percent to a record 25.6 million tons in 1996. Soybean exports to China, Mexico, and Indonesia were especially strong, setting records in 1996. At \$286 per ton, soybean export prices were nearly 21 percent higher than in 1995, boosting the total value of soybean shipments 36 percent. While cotton exports declined 26 percent in both volume and value, exports to Canada and Mexico were a record 64,000 tons and 150,000 tons, respectively.

### HVP Exports Advance for Eleventh Consecutive Year

Although high-valued product's (HVP) continued an 11-year upward trend, HVP exports increased only 5 percent in 1996, primarily due to the slowdown in beef exports and small horticultural export gains. HVP gains were largely due to increased poultry meat, animal feed, and soybean meal exports. Poultry meat exports jumped 23 percent to a record \$2.5 billion. Shipments to Russia were a record 937,000 tons. China represented a small but rapidly growing market for poultry meat in 1996. U.S. pork exports also reached records, 306,000 tons and \$1 billion in value. Exports of animal feeds and fodders advanced 5 percent to \$2.6 billion in 1996. Sharply higher prices boosted the value of soybean meal exports 45 percent, its highest export value since 1988. U.S. horticultural product exports increased nearly 4 percent to about \$9.9 billion, largely due to gains in wine and nuts. (See Economic Research Service, *Foreign Agricultural Trade of the United States, 1996 Calendar Year Supplement* for additional details on 1996 agricultural exports. Monthly agricultural trade information is published in the Economic Research Service's, *U.S. Agricultural Trade Update*).

\$2.4 billion, respectively. Notable gains in sales were also achieved by wheat (\$841 million), cotton (\$610 million), greenhouse/nursery (\$446 million), sorghum grain (\$441 million), rice (\$293 million), and potatoes (\$235 million). Corn production, which typically represents close to one-

fifth of crop sales value, contributed \$6.1 billion to the rise in the value of crop production, as producers sold \$3 billion more than in 1995 and added another \$3.1 billion to year-end inventories for future sale. Soybeans also made a \$2.9-billion contribution and, unlike corn, had almost no buildup in inventory.

With the notable exception of cattle, which is in the downward phase of its multi-year production cycle, 1996 was, financially speaking, a good year for producers of farm commodities. While not always at record levels, both prices and yields were generally favorable, putting farmers in the enviable position of having commodities to market when prices were at advantageous levels. This and the relatively small expansion, by recent historical standards, in total production expenses (3.1 percent) are key explanations for the \$15.5 billion rise in **net farm income** (table 2 and fig.1).

**Net cash income** in 1996 also increased from 1995, but not as dramatically as the rise in net farm income. Farmers were able to build stocks from the excellent harvest in 1996. These accumulated stocks are reflected in net farm income for 1996 because the commodities are valued and booked as change in inventories; but the postponement of their sale moves cash income into future years. Since the valuation of inventory is not a market transaction, it is excluded from net cash income accounting. Despite the postponing of substantial crop sales into the next year, the gain of \$15.6 billion in gross cash income was more than double the \$6.8 billion in added cash expenses, resulting in a hefty 17.1 percent rise in 1996 net cash income over 1995.

### Corn, Wheat, Soybeans, and Cotton Account For Three-Fourths of Increased Crop Receipts

Cash receipts for corn, which leads all other crops in total value marketed and composed 20 percent of the increase in receipts from all commodities, were \$21.6 billion in 1996, surpassing the previous record high of 18.6 billion in 1995 (table 4). Yet, the manner in which the two consecutive sales records were attained was very different. The modest, by recent standards, 7.4-billion bushel corn crop produced in 1995 was 27 percent below 1994's record crop of 10.1 billion bushels. However, in 1994, market prices were depressed by the large harvests, and farmers retained sizable quantities in inventories for future sale. The resulting draw-down of the large unsold inventories held over from 1994's record crop permitted farmers to expand sales quantities in 1995. The smaller crop and strong demand for corn, especially exports, bolstered corn prices. Benefitting from prices that were rising throughout the year and continued upward into the post-harvest period, producers were able to boost corn revenues even with a small harvest (fig. 7).

The rebound in corn production in 1996, in combination with prices that were relatively strong during and after the harvest season, enabled corn sales to top that of the prior



Figure 1  
**Net value-added, net farm income and net cash income, 1992-96**

*Net value-added and net farm income rose substantially in 1996*

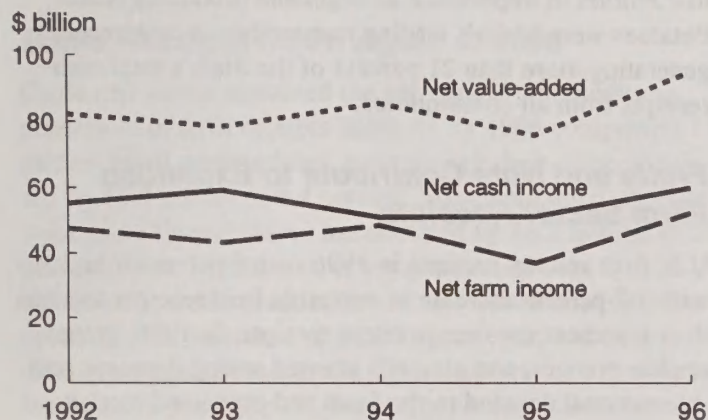


Figure 2  
**Net value-added by farm sector, shares to farm operator and nonoperator participants, 1992-96**

*Farm operator and nonoperator participants all shared in increased value-added for 1996*

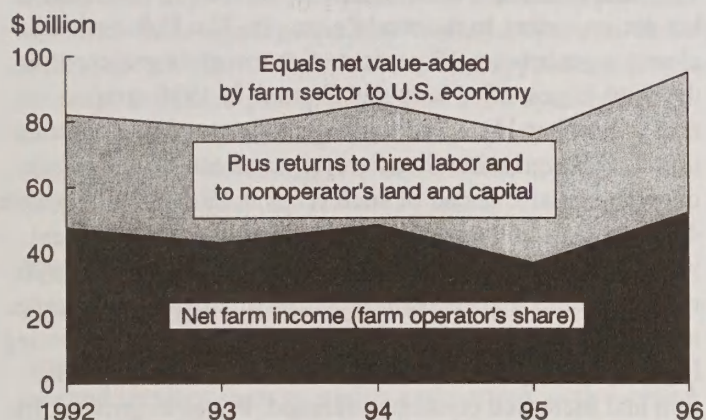


Figure 3  
**Final crop and animal output, 1990-96**

*Crops are larger share of agricultural sector output in last 3 years*

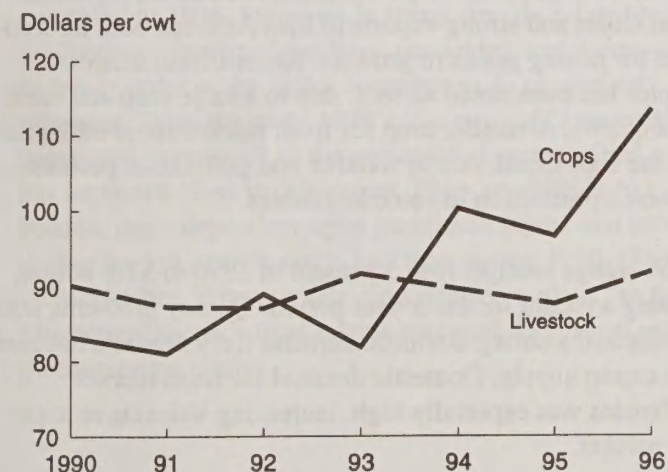


Figure 4  
**Corn, soybeans, and wheat production, 1990-96**

*Although not records, increased corn and soybean production in 1996 boosted final crop output*

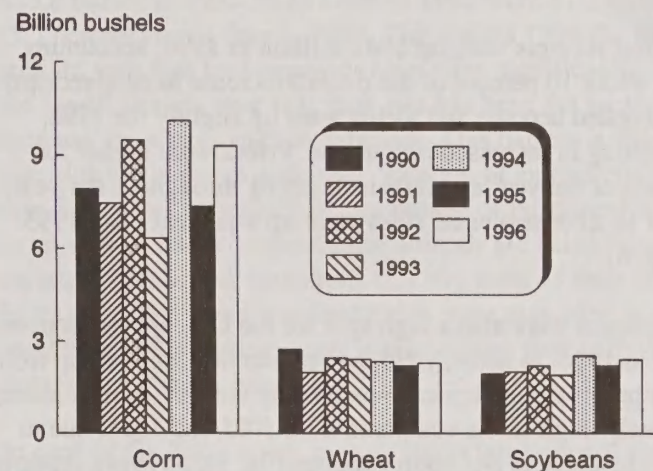


Figure 5  
**Final agricultural sector output and intermediate consumption outlays, 1990-96**

*Sector output rose rapidly in 1996, while expenses paid to other sectors increased modestly*

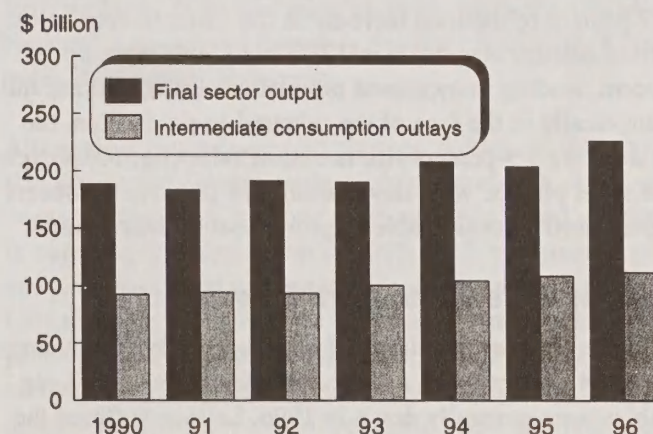
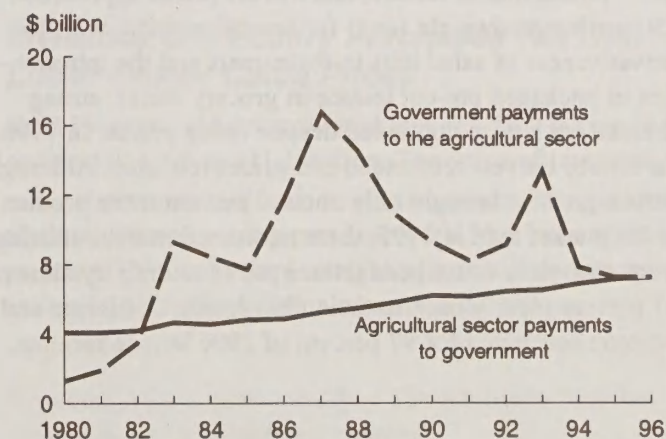


Figure 6  
**Direct government payments and farm sector payments to government, 1980-96**

*Net government transactions nearly zero in 1995-96 for the first since 1982*





year. The net result was a \$3-billion increase in 1996 sales value over 1995. With the increased 1996 cash sales and another \$3.1 billion of new corn production being added to year-end inventories, 1996 was a banner year for corn producers.

Wheat receipts were up \$841 million in 1996, accounting for about 10 percent of the overall increase in crop receipts. Harvested acreage and yields were up slightly for 1996, resulting in increased production. Prices were higher for much of the year and remained strong throughout the year; and as a consequence, sales were up 9 percent from 1995 (fig. 8).

Soybeans were also a high spot for the U.S. agricultural sector in 1996, as acres, yield, and production were all up from the prior year, and prices received by farmers were at exceptionally high levels compared with 1995 and 1996, due to low inventories and short supplies (fig. 9). Soybean receipts increased by a whopping \$2.4 billion, an amount equivalent to 27 percent of the net increase in crop revenues. A change of this magnitude is particularly noteworthy, simply because corn is usually the only crop for which the annual change can be expected to approach, much less exceed, \$2 billion.

Cotton sales for 1996 were up by \$610 million, equivalent to 7 percent of the total increase in the value of crop sales. Cotton acreage was down in 1996, but yields were up 30 percent, leading to increased production. Prices did not fall dramatically in the face of the rebound in production, the result being a 9-percent rise in cotton sales (fig. 10). Given that acres planted were down almost 14 percent, producers experienced a considerable improvement in their returns.

### ***Vegetable Receipts Were Down in 1996***

With the notable exceptions of potatoes, dry beans, cucumbers, and chili peppers, cash receipts from the sale of vegetables were generally down in 1996. Lettuce suffered the largest decline in value, \$563 million or 28 percent, compared with 1995. In 1995, cash receipts from lettuce had soared to 56 percent above those of 1994. Receipts in 1995 were the result of prices spiking to an exceptional level due to short supplies caused by adverse weather. Unusual spring floods in the Salinas Valley of California in 1995 resulted in lower production of lettuce, and market prices approached \$50 per hundredweight (cwt) for several months. With the pervasiveness of salad bars in restaurants and the introduction of packaged pre-cut lettuce in grocery stores, strong demand for lettuce continued despite rising prices. In 1996, the lettuce harvest rebounded and prices retreated. Although lettuce growers brought only about 6 percent more product to the market than in 1995, these additional market offerings were enough to cause head lettuce prices to drop by almost 37 percent (nearly back to their 1994 level). California and Arizona accounted for 97 percent of 1996 lettuce receipts.

More than 47 percent of U.S. cash receipts from vegetables come from California and Florida. Cash receipts from vegetables represent about 32 percent of California's cash receipts from all crops and 26 percent of Florida's. Cash receipts from potatoes enable Idaho and Washington to follow Florida in importance as vegetable producing States. Potatoes were Idaho's leading commodity in cash receipts, generating more than 21 percent of the State's total cash receipts from all commodities.

### ***Fruits and Nuts Contribute to Expanded Farm Sector Receipts***

U.S. fruit and nut receipts in 1996 rose 6 percent over 1995, with a 7-percent increase in noncitrus fruit receipts and less than 1 percent increase in citrus receipts. In 1996, grapes, apples, oranges, and almonds showed strong domestic and international demand in the fresh and processed markets.

Grapes, the United States' leading fruit and nut commodity in value of cash receipts, are experiencing a remarkable boost in export demand, especially for wine varieties. The U.S. wine industry has become increasingly important to U.S. agriculture. Nearly 55 percent of the 1996 grape crop was used for wine. U.S. grapes are not only important to the agricultural sector's contribution to the Nation's economy, but are important to the world's supply. The U.S. agricultural sector contributes 10 percent of the world's grape output, the third largest after Italy and France. In 1996, grapes ranked number 15 according to each commodity's contribution to U.S. agricultural cash receipts, ahead of apples and oranges, but also ahead of such crops as rice or barley (table 4). Total U.S. grape receipts were up a total of 14 percent, with wine receipts reflecting a 24-percent increase in 1996, raisin varieties a 10-percent increase, and fresh table grapes a 5-percent increase over 1995. Receipts were up, reflecting higher grower prices resulting from lower utilized production and increased consumer demand. Prices to growers for grapes increased 17 percent for fresh use and 16 percent for processing uses.

Receipts to the United States' second most important fruit commodity, apples, increased 17 percent to \$1.8 billion in 1996, the highest in the past 5 years. A short supply on the East Coast and strong exports to East Asia can both be credited for raising prices to growers. Record fresh usage of apples has been noted as well, due to a large crop and excellent quality. A smaller crop for fresh market apple utilization on the East Coast, due to weather and pollination problems, lowered production in some key States.

U.S. orange receipts rose 5 percent in 1996 to \$1.8 billion, setting a record for the 5-year period. Quality problems with navels and a strong domestic demand for Valencia's lowered the export supply. Domestic demand for fresh market Valencias was especially high, increasing Valencia receipts 25 percent.



Almond receipts climbed to over a billion dollars in 1996. Almonds, ranking 23 among the U.S. leading commodity receipts, are showing growth in domestic and international markets. The United States is the world's largest producer and exporter of almonds.

### ***Cattle Receipts Down Again in 1996***

Cattle and calves remained the top-ranked commodity in generation of cash receipts (table 4) for 1996 comprising 15 percent of all commodities, even though their value of sales fell by \$2.9 billion or 8.4 percent. Following trend, the sales value of cattle and calves has declined by \$8.2 billion, or 21 percent, since 1993 due to lower prices (fig. 11). Historically, cattle production and the related herd size has evidenced the existence of a multi-year cycle and indications are that cattle are in the downward phase of that cycle. Increases in poultry, pork, and dairy product sales prevented livestock receipts from falling for the third consecutive year in 1996. Value of poultry sales have been on the upward trend for the last decade and experienced an unusually large jump in 1996. Long-term per capita consumption trends indicate increased consumer demand for poultry meat. Increasing diet awareness among consumers may be a factor contributing to increased poultry consumption. While the adoption of large scale production and marketing practices similar to those employed in broiler production over the last several decades are thought to be lowering production costs for hogs, increased prices throughout 1996 appeared to be the key factor in increasing the value of pork sales in 1996 (fig. 12) and in increasing producer returns over 1995 (see 1996 Cost of Production for Crops and Livestock).

### ***Total Expenses for Purchased Inputs and Services Rose 3 Percent in 1996***

Total expenses for purchased inputs such as feed and fertilizer and services such as repairs and custom work—called “intermediate consumption outlays” in table 1—were estimated at \$112.4 billion in 1996, up \$3.4 billion (3.1 percent) from 1995. This year's annual increase was the smallest in the last 4 years. Feed expenses rose by \$1.4 billion, or equivalent to 42 percent of the total increased expenses, leading all other input and service expense items which also expanded in 1996. Increases in items directly related to crop production—fertilizer and lime, pesticides, and seeds—followed in order as the major contributors to expanding expenses. Since the early 1980's, the ratio of “intermediate consumption outlays” to the agricultural sector's final output has remained close to 50 percent. Farm production has become more dependent upon purchased inputs and services during the last decade and a half than during 1960-79 and 1950-59 when “intermediate consumption outlays” to the agricultural sector's final output averaged 45 percent and 38 percent, respectively.

### ***Feed Expenses Rise Again in 1996***

Estimated expenditures for feed were \$25.2 billion in 1996, up \$1.4 billion (5.9 percent) from a revised estimate of \$23.8 billion in 1995. Feed costs in 1995 were \$1.2 billion (5.3 percent) more than in 1994. This makes 1996 the fifth straight year that feed expenses have risen significantly, and the fourth straight year that their rise has been the largest increase among production expenses. This pattern is likely due to shifts in the structure and location of animal production, which has increased the percentage of purchased feed to all feed. A larger proportion of animals are being raised on large, specialized operations that buy most of their feed. In addition, dairy and hog production have expanded in the southwest and mountain areas where raising feedstuffs other than hay is uneconomical.

In each of the last 2 years, a coupling of large animal stocks with increased reliance on purchased feed has been the major reason for increased outlays for livestock feed. Relatively low feed prices during the last quarter of 1994 and the first half of 1995 encouraged many livestock, dairy, and poultry producers to expand already relatively high inventory and production levels. This expansion made them vulnerable to record-high grain and soybean prices in the last quarter of 1995 and most of 1996, when the USDA's National Agricultural Statistics Service (NASS) feed price index rose nearly 24 percent.

Although beef producers accelerated reduction of the herd size during the current cattle cycle's liquidation phase which began in late-1995, and hog producers continued a reduction in numbers that also began in 1995, ERS' estimate of grains and processed feed consumed was down only 4.2 percent for calendar year 1996. The large animal stock, already in place when feed price increases hit, forced animal producers to continue to expend large amounts for purchased feed, despite the direction toward reducing cattle and hog numbers. Furthermore, unfavorable weather conditions in early 1996 reduced forage supplies in the Southern Plains, forcing supplemental feeding of hay. Heavier demand for forage and hay and reduced hay production in 1996 drove supplies to extremely low levels in the second half of 1996, bidding up the price of existing stocks.

### ***Livestock and Poultry Purchases Fall With Lower Feeder Cattle Prices***

Total livestock and poultry purchases fell \$1.2 billion (9.6 percent) in 1996 to \$11.1 billion. The value of interstate sales of cattle and calves<sup>2</sup>, which constitutes 75 percent of all livestock and poultry purchases, fell \$1.4 billion (14.4 percent). This is the third straight year that interstate sales of cattle and calves have fallen more than \$1 billion.

<sup>2</sup>Interfarm sales of cattle and calves within the same State are counted as neither receipts nor expenses.

Figure 7

**Monthly corn prices, 1994-96**

*Higher corn prices over most of 1996, plus a larger harvest, contribute to rise in cash receipts*

Dollars per bushel

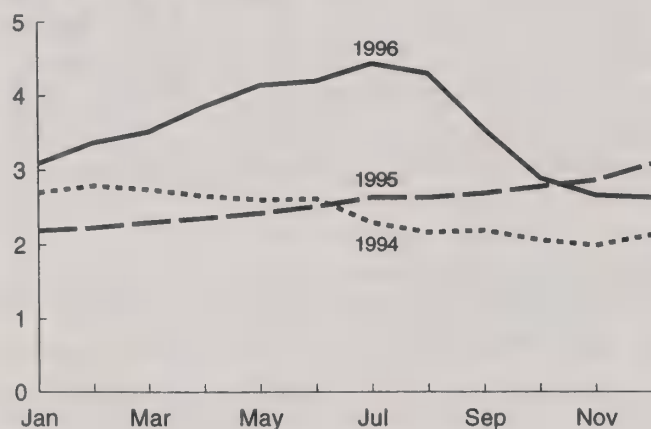


Figure 10

**Monthly cotton prices, 1994-96**

*Cotton prices in 1996 remained strong, even with bigger crop, contributing to rise in receipts*

Cents per pound

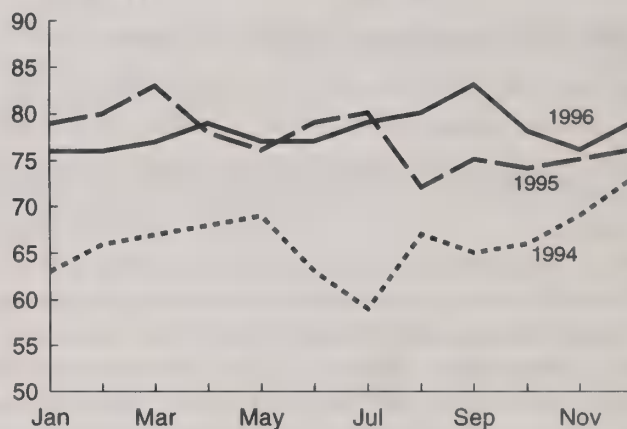


Figure 8

**Monthly wheat prices, 1994-96**

*Higher wheat prices for much of 1996, with slightly larger acreage and yields, boosted receipts*

Dollars per bushel

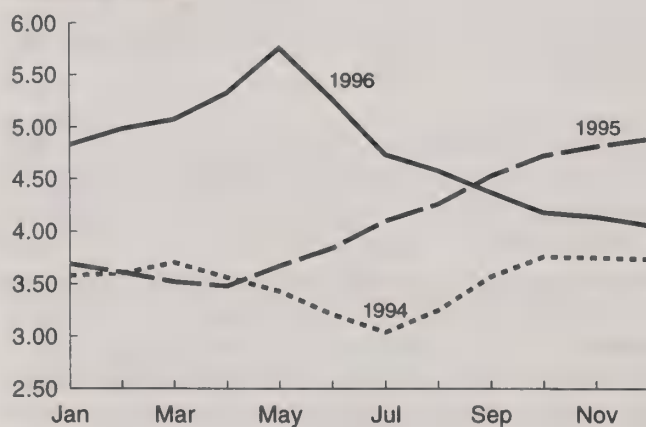


Figure 11

**Monthly beef prices, 1994-96**

*Beef prices lower for much of 1996, recovering slightly at year's end*

Dollars per cwt

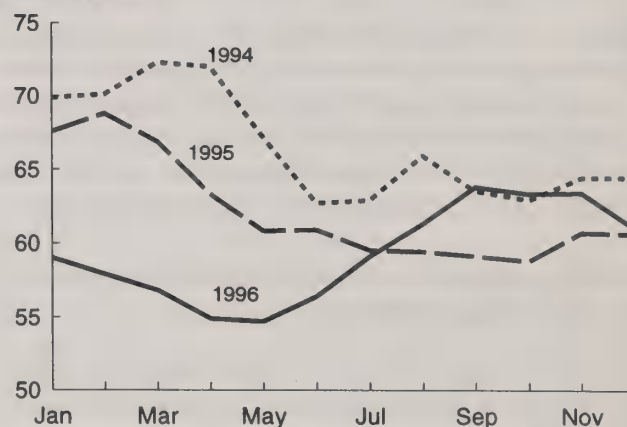


Figure 9

**Monthly soybean prices, 1994-96**

*Soybean prices rose in 1996, and remained above 1995 despite large harvest*

Dollars per bushel

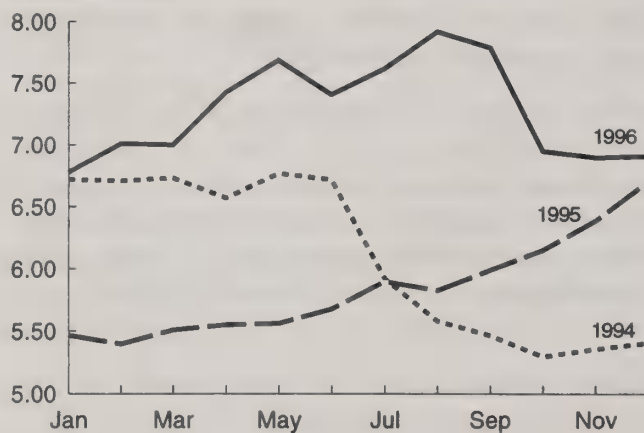
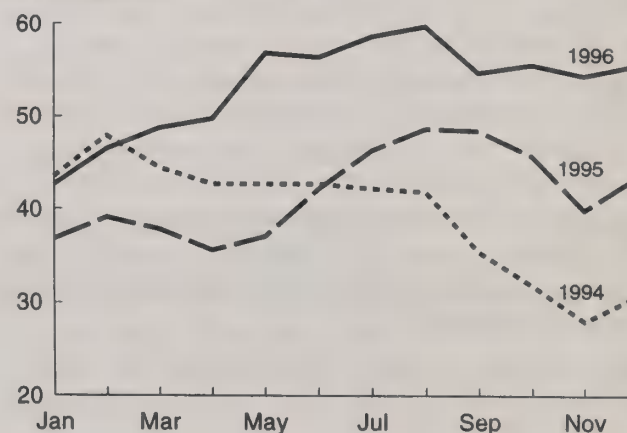


Figure 12

**Monthly hog prices, 1994-96**

*Higher 1996 hog prices support value of animal output, offsetting lower cattle sales*

Dollars per cwt





Expenditures for cattle and calves in 1996 were down \$3.9 billion (32 percent) from the previous peak in 1993. As in 1994, both total liveweight and average value per cwt were down in 1996. In 1995, total liveweight rose 5 percent, but the average value fell 14 percent. In 1996, the average value fell another 9.4 percent in response to record high prices for grain and continuing low beef prices (consistent with increased beef production due to unusually high slaughter rates).

The value of interstate sales of breeding hogs and feeder pigs increased 37 percent in response to a 17-percent increase in liveweight and an 18-percent jump in the average price. Total chick and poult purchases rose 3 percent as the poultry sector continued to expand.

### ***Crop Production Expenses Rise With Larger Acreage***

Increases in crop acreage, particularly the 11.6-percent expansion in corn acreage, was the dominant factor in increased crop input expenses in 1996. **Seed expenses** were \$6.1 billion, up 11.9 percent from 1995. The National Agricultural Statistics Service's seed prices paid index (primarily hybrid corn) rose 5 percent. The remainder of the increase in seed costs was attributable to increased acreage.

Estimated **fertilizer and soil conditioner** expenditures were \$10.9 billion in 1996, up 9.0 percent from 1995. This is the third consecutive year that the increase in fertilizer expenses has exceeded 9 percent. Significant price increases in 1994 and 1995 raised the NASS fertilizer prices paid index (aggregate of all fertilizer) 25 percent and accounted for much of the increase in fertilizer expenses. The price index rose only 3.3 percent in 1996, so the principal cause of the 1996 increase was acreage increases, in particular, corn acreage. At 1995 application rates (1996 are not available), the increase in fertilizer use on corn would account for more than 60 percent of the increase in quantities applied. Fertilizer expenses have now risen each year since 1992.

Expenditures for **pesticides** were estimated at \$8.5 billion, 10.3 percent higher than 1995's \$7.7 billion. This is the largest increase since the 17.8-percent jump in 1991. NASS' pesticide prices paid index rose 3.5 percent. Expanded acreage accounted for the rest. Herbicides constitute between 65 and 70 percent of pesticides applied and is the principal pesticide used on corn. The combination of expanded acreage and the rise in NASS' herbicide subcomponent prices paid index would have indicated a 10.5-percent increase in herbicide expenditures. Pesticide expenses have been climbing steadily since 1988.

The estimate of expenditures for **petroleum fuel and oils** was \$5.7 billion, up 5.3 percent from the revised 1995 estimate of \$5.4 billion. Gasoline and diesel fuel prices rose sharply beginning in April due to shortages that occurred after particularly harsh winter weather.

**Contract labor expenses** were \$2.1 billion in 1996, a rise of 8.1 percent, approximately the same increase as in 1995. Wage rates for agricultural service workers in California, which employs more than 30 percent of such workers, rose 2.5 percent. Contract labor is treated differently from hired labor because employment is through an intermediary that makes the arrangements and handles the administrative functions, which qualifies the activity as a separate business—providing services to the employing business. Under the Department of Commerce's National Income Accounts, contract labor is classified as being part of the service sector as distinct from the agricultural sector.

Other intermediate product expenses presented a mixed picture. **Repair and maintenance** of farm business assets increased 6.7 percent, led by an 8.0-percent rise in motor vehicle and machinery repair and maintenance. Machine hire and custom work expenses, based on survey results, were estimated at \$4.7 billion, down 2.1 percent from 1995. Both machinery and equipment leasing and crop-related custom work outlays were lower.

**Marketing, storage, and transportation expenses** fell 5.0 percent to \$6.8 billion. Transportation rates for agricultural products were down. Rail and truck rates were up slightly, but barge rates for farm products on the Mississippi River fell 25 percent from abnormally high 1995 rates. The volume of grain and fresh fruit and vegetable shipments was down around 12 percent. Bureau of Labor Statistics index of farm product warehousing and storage costs fell 1.5 percent and the volume of commodities stored was less, given the smaller 1995 harvest which would be reflected in the 1996 expenses. The price index for packaging and containers in the general economy was almost 4 percent lower, so the cost to the agricultural sector was probably less as well.

**Miscellaneous expenses** totaled \$18.0 billion, a 1.6-percent decrease from a revised 1995 estimate of \$18.3 billion. The only significant increases were in estimated outlays for custom feeding (12.1 percent) and general management expenses (1.5 percent), where a 9.6-percent rise in gross insurance expenses offset an 8.5-percent decrease in other management expenses. Estimated expenditures for livestock services and supplies, tools and shop equipment purchases, and irrigation water were all down.

### ***Expenditures To Acquire Services of Factors Of Production Rose 9 Percent in 1997***

**Employee compensation** for hired labor was \$15.2 billion in 1996, \$872 million higher than in 1995. The 6.1-percent increase in 1996 was similar to the 6.2-percent increase in 1995. A large jump in perquisites (noncash benefits) was reflected in the 1995 increase in total labor expenses. The National Agricultural Statistics Service's wages index rose 3.6 percent as the average hourly wage earned by all types of hired workers went from \$6.54 to \$6.78. The 1996



increase in the wages index was the largest since 1992, and there are signs that wage rates are increasing faster. October 1996 wage rates were 5.9 percent above October 1995, and increases in the first three quarters of 1997 over the same quarters in 1996 are all greater than 4 percent.

**Net rent to nonoperator landlords** in 1996 was \$14.3 billion, up 19.3 percent from 1995. An important part of the increase was due to a \$2.7-billion (33 percent) increase in share rents corresponding with the sector's higher value of production. About \$1.9 billion of the increase was in corn for grain. Total landlord gross income, excluding forest products to nonoperators, was \$20.6 billion, an increase of 16 percent. Cash rent was \$7.7 billion, up 3.3 percent, as cash rent rates and acres rented both rose. Direct government payments received by landlords were \$1.3 billion, the same as in 1995. Expenses paid by all landlords, including capital consumption, were \$7.2 billion, up 6 percent. Crop inputs financed by landlords rose 26 percent to \$1.7 billion. Property taxes paid by landlords were \$2.4 billion, up 3 percent from 1995. Nonoperator landlords netted \$12.1 billion, a rise of 24 percent from 1995. Forest product receipts credited to other nonoperator landlords added another \$2.2 billion.

**Total interest expenses** were \$13.2 billion, up 3.9 percent from \$12.7 billion in 1995. Interest costs incurred on nonreal estate debt was \$6.9 billion, up 2.6 percent from \$6.7 billion in 1995. However, nonreal estate interest excluding interest on Commodity Credit Corporation (CCC) loans rose 4.6 percent. Repayment of CCC loans returned to normal levels after a particularly heavy retirement of CCC debt in 1995. Operators paid \$109 million in interest on CCC debt in 1996, down from \$232 million in 1995. Interest on real estate debt was \$6.4 billion, up 5.2 percent from \$6.0 billion in 1995.

Interest expenses have risen in each of the last 3 years after a long string of decreases from 1983 to 1993. However, the \$492 million increase in 1996 is about half the dollar increases in 1994 and 1995. The 3.9-percent rate of growth in interest expenses in 1996 was less than half the 8.4-percent rate of increase in the previous 2 years. The smaller increase in interest expenses last year is primarily attributable to a slower rise in interest rates between 1995 and 1996. Nonreal estate interest rates rose less than one-half percent, after increasing around 7 percent in the previous 2 years, and real estate interest rates rose 1.6 percent, resulting in a weighted-average increase of 1.1 percent.

The 1996 rise in average farm business debt is the sixth increase since a small decrease in 1990. In each year during this period, average debt has risen slightly more. Average nonreal estate debt, excluding CCC loans, increased \$2.7 billion (3.9 percent) in 1996. This was the third straight rise of \$2.7 billion in average nonreal estate debt. Average nonreal estate debt has risen every year since 1989 but at varying rates. From 1994 to 1996, average nonreal estate debt

has risen \$8.3 billion, after rising \$3.0 billion between 1989 and 1993. Average real estate debt increased \$2.1 billion (2.5 percent) in 1996. Average real estate debt has also been rising at an increasing rate since 1991.

### ***Property Taxes and Capital Consumption Were Little Changed in 1996***

**Property taxes** paid continued their pattern of slow, steady growth in 1996, increasing 1.6 percent to \$6.8 billion. Real estate tax payments were estimated up 4.3 percent to \$6.3 billion. In each of the last 2 years, personal property taxes have fallen. After three year-to-year declines in the period between 1978 and 1984, property tax payments have risen every year except 1991. Taxes do not respond immediately to changes in the value of real estate and other property because they are set by legislation and reassessments of property values are periodic. However, the steady rise in tax payments corresponds to the overall improvement in the real estate values and reflects the capacity of operations to pay assessed taxes in a timely manner.

**Total capital consumption**, including operator dwellings, was estimated at \$18.9 billion, an increase of \$15 million over 1995. Capital consumption for farm business items only, excluding operator dwelling, was down 0.8 percent at \$16.2 billion. However, operator dwelling capital consumption rose more than 5.4 percent due to rising operator dwelling values. Interestingly, the ratio of capital consumption to net cash income, which measures the portion of net income that should be reserved for capital replacement, has been fairly stable since 1987 at the level of 1955-70, while capital expenditures as a percent of net cash income have been slowly rising since 1986.

Despite an improved farm economy and lower interest rates, a number of factors have worked to hold new capital expenditures down. Farmers are continuing the trend of maintaining and repairing machinery and equipment and keeping items in service longer that began in the early 1980's when capital expenditures began to fall off dramatically. The percent of total production expenses for repair and maintenance has been fairly constant since then. More farmers are leasing equipment or contracting with others for custom work. Adoption of conservation tillage has reduced demand for tillage equipment and lowered the horsepower requirement per acre planted for farms using these technologies.

Capital consumption of service buildings has decreased steadily since 1981, except for a small increase in 1995, as new expenditures fell as low as one-third of their 1979 peak during the 1985-92 period. In 1996, service building construction rose nearly \$600 million to \$2.3 billion, to about the same level as in 1982.

Tractor and farm machinery capital consumption in 1996 was estimated at \$10.7 billion, down 1.2 percent from \$10.9



billion in 1995. After reaching a low point in 1987, tractor and farm machinery capital consumption climbed a little more than \$1 billion in 1990. Since then, it has been essentially level, varying less than \$250 million per year. Almost all of the increase from 1987 to 1990 was due to increases in tractor capital consumption, which has continued upward at a very slow rate. The overall increase in tractor capital consumption is due to both the climb in the average price of tractors, which elevates their replacement value, and

increased purchases. Capital consumption of farm machinery and equipment was flat from 1987 to 1995, but fell more than \$200 million in 1996 due to the smallest increase in the prices paid for machinery and equipment since 1987. Estimated investment in machinery and equipment in 1996 reached its highest point since 1990 at \$5.5 billion, an increase of \$450 million (8.8 percent) over 1995. Machinery and equipment purchases have stayed between \$5.1 and \$5.5 billion each year since 1991, after large increases in 1989 and 1990.



Table 1--United States: Value added to the U.S. economy by the agricultural sector via the production of goods and services, 1992-1996 1/

Table 1--United States: value added to the U.S. economy by the agricultural sector via the production of goods and services, 1992-1996							1996/95 Change	
Item	1992	1993	1994	1995	1996	Amount	Percent	
Thousand dollars						Mil \$	%	
Final crop output	89,036,487	81,966,590	100,285,791	96,655,403	113,512,267	16,857	17.4	
Food grains	8,467,473	8,179,932	9,545,012	10,416,611	11,549,958	1,133	10.9	
Feed crops	20,098,600	20,211,046	20,351,200	24,282,381	28,113,655	3,831	15.8	
Cotton	5,192,067	5,249,680	6,737,709	6,851,079	7,460,813	610	8.9	
Oil crops	13,285,937	13,219,881	14,656,680	15,466,338	17,755,891	2,290	14.8	
Tobacco	2,958,005	2,947,785	2,656,352	2,548,399	2,795,990	248	9.7	
Fruits and tree nuts	10,178,673	10,284,137	10,334,702	11,073,919	11,713,819	640	5.8	
Vegetables	11,851,388	13,434,608	13,902,047	14,890,935	14,348,758	(542)	(3.6)	
All other crops	13,711,536	13,952,700	14,895,257	15,170,425	15,685,894	515	3.4	
Home consumption	115,518	68,578	71,815	104,286	91,503	(13)	(12.3)	
Value of inventory adjustment 2/	3,177,290	(5,581,757)	7,135,017	(4,148,970)	3,995,986	8,145		
Final animal output	87,089,180	91,690,983	89,681,596	87,617,240	91,963,245	4,346	5.0	
Meat animals	47,748,299	50,823,492	46,784,612	44,827,596	44,382,498	(445)	(1.0)	
Dairy products	19,736,250	19,242,553	19,935,161	19,893,610	22,833,925	2,940	14.8	
Poultry and eggs	15,523,553	17,325,621	18,445,009	19,068,774	22,326,291	3,258	17.1	
Miscellaneous livestock	2,628,877	2,778,811	2,995,146	3,213,776	3,371,498	158	4.9	
Home consumption	473,969	450,631	409,205	365,100	333,022	(32)	(8.8)	
Value of inventory adjustment 2/	978,232	1,069,875	1,112,463	248,384	(1,283,989)	(1,532)		
Services and forestry	15,178,596	16,583,167	17,881,849	19,374,713	20,736,536	1,362	7.0	
Machine hire and customwork	1,786,650	1,864,790	2,070,810	1,927,653	2,153,757	226	11.7	
Forest products sold	2,177,753	2,555,263	2,742,869	2,939,262	2,918,157	(21)	(0.7)	
Other farm income	4,208,708	4,608,891	4,392,376	5,213,331	5,893,636	680	13.0	
Gross imputed rental value of farm dwellings	7,005,485	7,554,223	8,675,794	9,294,467	9,770,986	477	5.1	
Final agricultural sector output	191,304,263	190,240,740	207,849,236	203,647,356	226,212,048	22,565	11.1	
less: Intermediate consumption outlays	93,541,914	100,565,154	104,905,582	109,011,103	112,387,179	3,376	3.1	
Farm origin	38,620,492	41,193,584	41,276,993	41,627,934	42,494,681	867	2.1	
Feed purchased	20,132,962	21,431,234	22,631,209	23,829,253	25,234,461	1,405	5.9	
Livestock and poultry purchased	13,574,171	14,597,315	13,270,118	12,335,346	11,148,086	(1,187)	(9.6)	
Seed purchased	4,913,359	5,165,035	5,375,666	5,463,335	6,112,134	649	11.9	
Manufactured inputs	22,710,022	23,146,902	24,398,465	26,175,192	28,393,261	2,218	8.5	
Fertilizers and lime	8,330,712	8,397,508	9,179,677	10,032,994	10,934,178	901	9.0	
Pesticides	6,470,627	6,723,326	7,225,032	7,726,463	8,525,120	799	10.3	
Petroleum fuel and oils	5,298,422	5,349,809	5,312,044	5,447,664	5,736,339	289	5.3	
Electricity	2,610,261	2,676,259	2,681,712	2,968,071	3,197,624	230	7.7	
Other intermediate expenses	32,211,400	36,224,668	39,230,124	41,207,977	41,499,237	291	0.7	
Repair and maintenance of capital items	8,470,675	9,193,138	9,082,921	9,458,412	10,303,718	845	8.9	
Machine hire and customwork	3,781,693	4,420,056	4,789,845	4,791,726	4,691,963	(100)	(2.1)	
Marketing, storage, and transportation expenses	4,541,289	5,648,396	6,820,594	7,180,481	6,817,878	(363)	(5.0)	
Contract labor	1,717,422	1,770,956	1,805,440	1,969,054	2,128,835	160	8.1	
Miscellaneous expenses	13,700,321	15,192,122	16,731,324	17,808,304	17,556,843	(251)	(1.4)	
plus: Net government transactions	2,691,362	6,862,948	974,270	74,466	29,527	(45)	(60.3)	
+ Direct government payments	9,168,920	13,402,015	7,879,129	7,253,372	7,285,541	32	0.4	
- Motor vehicle registration and licensing fees	360,543	362,030	414,967	461,750	428,262	(33)	(7.3)	
- Property taxes	6,117,015	6,177,037	6,489,892	6,717,156	6,827,752	111	1.6	
Gross value added	100,453,711	96,538,534	103,917,924	94,710,719	113,854,396	19,144	20.2	
less: Capital consumption	18,309,531	18,377,761	18,688,225	18,914,273	18,929,540	15	0.1	
Net value added	82,144,180	78,160,773	85,229,699	75,796,446	94,924,856	19,128	25.2	
less: Factor payments	34,607,270	35,065,904	36,958,278	39,057,112	42,730,493	3,673	9.4	
Employee compensation (total hired labor)	12,282,246	13,235,320	13,503,184	14,346,758	15,219,042	872	6.1	
Net rent received by nonoperator landlords	11,187,500	11,009,084	11,719,877	11,983,988	14,293,127	2,309	19.3	
Real estate and nonreal estate interest	11,137,524	10,821,500	11,735,217	12,726,365	13,218,324	492	3.9	
Net farm income	47,536,909	43,094,869	48,271,420	36,739,334	52,194,363	15,455	42.1	

1/ Final sector output is the gross value of the commodities and services produced within a year. Net value-added is the sector's contribution to the national economy and is the sum of the income from production earned by all factors-of-production. Net farm income is the farm operators' share of income from the sector's production activities. The concept presented is consistent with that employed by the Organization for Economic Cooperation and Development. 2/ A positive value of inventory change represents current-year production not sold by December 1. A negative value is an offset to production from prior years included in current-year sales.



Table 2--Farm income indicators, 1992-96

Item	1992	1993	1994	1995	1996
Thousand dollars					
UNITED STATES					
Gross farm income	200,473,183	203,642,755	215,728,365	210,900,728	233,497,589
Gross cash income	188,722,689	200,081,205	198,324,071	205,037,461	220,590,081
Farm marketings	171,380,658	177,650,246	181,238,887	187,703,843	202,338,990
Crops	85,743,679	87,479,769	93,078,959	100,700,087	109,424,778
Livestock and products	85,636,979	90,170,477	88,159,928	87,003,756	92,914,212
Government payments	9,168,920	13,402,015	7,879,129	7,253,372	7,285,541
Farm-related income	8,173,111	9,028,944	9,206,055	10,080,246	10,965,550
Noncash income	7,594,972	8,073,432	9,156,814	9,763,853	10,195,511
Value of home consumption	589,487	519,209	481,020	469,386	424,525
Rental value of dwellings	7,005,485	7,554,223	8,675,794	9,294,467	9,770,986
Operator and other dwellings 1/	6,514,859	7,124,874	8,241,493	8,731,846	9,156,132
Hired laborer dwellings	490,626	429,349	434,301	562,621	614,854
Value of inventory adjustment	4,155,522	(4,511,882)	8,247,480	(3,900,586)	2,711,997
Total production expenses	152,936,274	160,547,886	167,456,945	174,161,394	181,303,225
Intermediate product expenses	92,185,035	99,156,228	103,515,109	107,503,799	110,686,606
Farm origin	38,620,492	41,193,584	41,276,993	41,627,934	42,494,681
Feed purchased	20,132,962	21,431,234	22,631,209	23,829,253	25,234,461
Livestock and poultry purchased	13,574,171	14,597,315	13,270,118	12,335,346	11,148,086
Seed purchased	4,913,359	5,165,035	5,375,666	5,463,335	6,112,134
Manufactured inputs	22,710,022	23,146,902	24,398,465	26,175,192	28,393,261
Fertilizer and lime	8,330,712	8,397,508	9,179,677	10,032,994	10,934,178
Pesticides	6,470,627	6,723,326	7,225,032	7,726,463	8,525,120
Fuel and oil	5,298,422	5,349,809	5,312,044	5,447,664	5,736,339
Electricity	2,610,261	2,676,259	2,681,712	2,968,071	3,197,624
Other	30,854,521	34,815,742	37,839,651	39,700,673	39,798,664
Repair and maintenance	8,470,675	9,193,138	9,082,921	9,458,412	10,303,718
Other miscellaneous	22,383,846	25,622,604	28,756,730	30,242,261	29,494,946
Interest	11,137,524	10,821,500	11,735,217	12,726,365	13,218,324
Real estate	5,742,274	5,488,616	5,781,610	6,041,533	6,356,574
Nonreal estate	5,395,250	5,332,884	5,953,607	6,684,832	6,861,750
Contract and hired labor expenses	13,999,668	15,006,276	15,308,624	16,315,812	17,347,877
Net rent to nonoperator landlords 2/	11,187,500	11,009,084	11,719,877	11,983,988	14,293,127
Capital consumption	18,309,531	18,377,761	18,688,225	18,914,273	18,929,540
Property taxes	6,117,015	6,177,037	6,489,892	6,717,156	6,827,752
NET FARM INCOME 3/	47,536,909	43,094,869	48,271,420	36,739,334	52,194,363
Gross receipts of farms	193,958,324	196,517,881	207,486,872	202,168,882	224,341,457
Farm production expenses	148,871,592	156,490,454	162,980,647	169,348,115	176,064,087
Nonfactor payments	114,625,269	121,773,299	126,419,705	130,713,995	133,769,246
Intermediate product expenses	91,315,202	98,332,019	102,565,703	106,551,408	109,476,374
Capital consumption	16,102,700	16,164,380	16,321,303	16,311,971	16,186,890
Property taxes	5,489,945	5,505,944	5,727,259	5,881,562	5,977,147
Contract labor	1,717,422	1,770,956	1,805,440	1,969,054	2,128,835
Factor payments	34,246,322	34,717,155	36,560,941	38,634,120	42,294,842
Interest	10,776,576	10,472,751	11,337,880	12,303,373	12,782,673
Hired labor compensation	12,282,246	13,235,320	13,503,184	14,346,758	15,219,042
Net rent to nonoperator landlords	11,187,500	11,009,084	11,719,877	11,983,988	14,293,127
RETURNS TO OPERATORS 4/	45,086,732	40,027,427	44,506,225	32,820,767	48,277,370
Gross cash income	188,722,689	200,081,205	198,324,071	205,037,461	220,590,081
Cash expenses	133,646,463	141,246,959	147,600,019	153,859,697	160,649,172
Cash expenses, excluding net rent	121,086,457	128,883,363	134,500,973	140,482,829	144,951,724
Intermediate product expenses	91,315,202	98,332,019	102,565,703	106,551,408	109,476,374
Interest	10,776,576	10,472,751	11,337,880	12,303,373	12,782,673
Cash labor expenses	13,504,734	14,572,649	14,870,131	15,746,486	16,715,530
Property taxes	5,489,945	5,505,944	5,727,259	5,881,562	5,977,147
Net rent to nonoperator landlords 5/	12,560,006	12,363,595	13,099,045	13,376,869	15,697,448
NET CASH INCOME	55,076,226	58,834,246	50,724,052	51,177,764	59,940,909

1/ Value added to gross income. Value added to net farm income equals difference in net farm income and returns to operators. 2/ Includes landlord capital consumption. 3/ Statistics in and above the net farm income line represent the farm sector, defined as including farm operators' dwellings located on farms. Statistics below the net farm income line represent only the farm businesses to the exclusion of the operators' dwellings. 4/ Returns to operators is equivalent to net farm income excluding the income and expenses associated with farm operators' dwellings. 5/ Excludes landlord capital consumption.



Table 3--United States: Net cash income from farming operations, 1992-96 1/

Item	1992	1993	1994	1995	1996
1,000 dollars					
Gross cash income	188,722,689	200,081,205	198,324,071	205,037,461	220,590,081
Farm marketings	171,380,658	177,650,246	181,238,887	187,703,843	202,338,990
Crops	85,743,679	87,479,769	93,078,959	100,700,087	109,424,778
Livestock and products	85,636,979	90,170,477	88,159,928	87,003,756	92,914,212
Government payments	9,168,920	13,402,015	7,879,129	7,253,372	7,285,541
Farm-related income	8,173,111	9,028,944	9,206,055	10,080,246	10,965,550
Cash production expenses	133,646,463	141,246,959	147,600,019	153,859,697	160,649,172
Cash expenses, excluding net rent	121,086,457	128,883,363	134,500,973	140,482,829	144,951,724
Intermediate product expenses	91,315,202	98,332,019	102,565,703	106,551,408	109,476,374
Farm origin	38,620,492	41,193,584	41,276,993	41,627,934	42,494,681
Feed purchased	20,132,962	21,431,234	22,631,209	23,829,253	25,234,461
Livestock and poultry purchased	13,574,171	14,597,315	13,270,118	12,335,346	11,148,086
Seed purchased	4,913,359	5,165,035	5,375,666	5,463,335	6,112,134
Manufactured inputs	22,710,022	23,146,902	24,398,465	26,175,192	28,393,261
Fertilizer and lime	8,330,712	8,397,508	9,179,677	10,032,994	10,934,178
Pesticides	6,470,627	6,723,326	7,225,032	7,726,463	8,525,120
Fuel and oil	5,298,422	5,349,809	5,312,044	5,447,664	5,736,339
Electricity	2,610,261	2,676,259	2,681,712	2,968,071	3,197,624
Other	29,984,688	33,991,533	36,890,245	38,748,282	38,588,432
Interest	10,776,576	10,472,751	11,337,880	12,303,373	12,782,673
Real estate	5,412,108	5,160,935	5,404,209	5,635,642	5,934,349
Nonreal estate	5,395,250	5,332,884	5,953,607	6,684,832	6,861,750
Cash labor expenses	13,504,734	14,572,649	14,870,131	15,746,486	16,715,530
Property taxes	5,489,945	5,505,944	5,727,259	5,881,562	5,977,147
Net rent to nonoperators, exc. capital consumption	12,560,006	12,363,595	13,099,045	13,376,869	15,697,448
NET CASH INCOME	55,076,226	58,834,246	50,724,052	51,177,764	59,940,909

1/ Differs from sector measures by excluding operators' dwellings.



Table 4--United States: Leading commodities for cash receipts, 1996

Rank	Items	Value of U.S. receipts 1,000 dollars	Percent of U.S. total Percent ---	Cumulative percent 1/ ---	Rank in prior year
	All commodities	202,338,990	100.0	--	--
	Livestock and products	92,914,212	45.9	--	--
	Crops	109,424,778	54.1	--	--
1	Cattle and calves	31,138,046	15.4	15.4	1
2	Dairy products	22,833,925	11.3	26.7	2
3	Corn	21,573,363	10.7	37.3	3
4	Soybeans	16,211,387	8.0	45.3	4
5	Broilers	13,906,019	6.9	52.2	5
6	Hogs	12,643,736	6.2	58.5	7
7	Greenhouse and nursery	10,887,058	5.4	63.9	6
8	Wheat	9,955,616	4.9	68.8	8
9	Cotton	7,460,813	3.7	72.5	9
10	Chicken eggs	4,756,571	2.4	74.8	10
11	Hay	3,573,530	1.8	76.6	11
12	Turkeys	3,056,314	1.5	78.1	12
13	Tobacco	2,795,990	1.4	79.5	13
14	Potatoes	2,699,259	1.3	80.8	14
15	Grapes	2,334,020	1.2	82.0	15
16	Apples	1,846,052	0.9	82.9	19
17	Sorghum grain	1,813,188	0.9	83.8	20
18	Oranges	1,798,311	0.9	84.7	17
19	Tomatoes	1,603,232	0.8	85.4	18
20	Rice	1,575,115	0.8	86.2	21
21	Lettuce	1,427,400	0.7	86.9	16
22	Sugar beets	1,017,475	0.5	87.4	22
23	Almonds	1,008,576	0.5	87.9	25
24	Barley	992,388	0.5	88.4	26
25	Peanuts	969,132	0.5	88.9	23
26	Cane for sugar	865,965	0.4	89.3	26
27	Strawberries	770,324	0.4	89.7	27
28	Aquaculture	767,750	0.4	90.1	29
29	Mushrooms	753,052	0.4	90.5	28
30	Onions	701,006	0.3	90.8	30
31	Dry beans	663,875	0.3	91.1	32
32	Corn, sweet	636,023	0.3	91.4	31
33	Horses/mules	628,000	0.3	91.8	33
34	Sheep and lambs	600,716	0.3	92.1	34
35	Christmas trees	474,435	0.2	92.3	NA
	Government payments 2/	7,285,541	--	--	--

-- = Not applicable.

Numbers may not add due to rounding.

1/ The cumulative percentage is the sum of the percent of U.S. total for each commodity and all preceding commodities.

2/ Government payments made directly to farmers in cash or Payment-in-Kind.



# **A Look at Farm Sector Cash Income by Size Class Gives Insights Into Farm Diversity**

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## ***Farms With Sales Over \$1,000,000 Focus on Livestock and Speciality Crops***

Examining the net cash income from farming and its various components by farm size provides insight into the diversity of the farm sector. Very large commercial farms (those that produced and sold more than \$1,000,000 during the year), while less than 1 percent of the Nation's farm businesses, represent almost one-third of U.S. farm commodity sales. These very large farms tend to specialize in the production of fruits, vegetables, greenhouse, and nursery products, or in cattle, dairy, and poultry. Because of the commodity mix emphasized on these very large farms, government payments make up a smaller percentage of their gross cash income than typical of smaller size farms.

The biggest cash expense for the very large commercial farms is feed, followed by labor, with the sum accounting for more than 40 percent of their total cash expenses. The importance of feed and labor expenses is likely due to the predominant types of farm enterprises—big feeding operations that require large quantities of purchased feed, or producers of high-valued crops which are relatively labor intensive. The very large commercial farms had a lower percentage of total expenditures for manufactured inputs, interest, and repairs and maintenance. (Manufactured inputs include fertilizer, lime, pesticides, fuel, oil, and electricity.) This suggests that the production expenses of many of these very large commercial farms are more heavily influenced by changes in the feed prices and labor wage rates than by price changes in manufactured inputs.

## ***Large- and Medium-Sized Commercial Operations Likely To Be Cash Grain Farms***

As farm size decreases, government payments and farm-related income become a larger share of farm receipts. Cash grain farms are concentrated in the large, upper medium,

and lower medium commercial size classes. (These farms have gross annual sales of \$100,000 to \$999,999). Farms in these size categories spend a lower percentage of their total cash expenses on farm-origin inputs and cash labor, and higher percentages for manufactured inputs and rent to non-operator landlords than the very large commercial farms. These farms are likely to see significant impacts on their expenses and returns from price changes in manufactured inputs and cash grains. Changes in cash grain prices also influence the amount they pay for farmland rental.

## ***Small Farms Likely To Have Negative Net Returns***

Small farms, those with sales less than \$50,000 per year, receive a larger proportion of their cash receipts from farm-related income and government payments than larger farms. Sixty percent of the Nation's farms are in this group. About one-third of the small farms' commodity sales are derived from cattle and calves. Forest products are the second largest source of cash income. Government payments are an important source of cash receipts among the smallest farms. Turning to expenditures, small noncommercial farms use larger shares of their cash expenses on miscellaneous farm expenses, interest, and feed than all other expense items. The major miscellaneous expenses include insurance, other management items, tools and shop equipment, custom feeding fees, and health and breeding services and supplies. The aggregate net cash income for the smallest farms within this category (sales less than \$20,000) is negative, implying that many of the smallest farms fail to make a profit.



Table 5--Number of farms and net cash income by size class, 1996

Item	\$1,000,000 and over	\$500,000 to \$999,999	\$250,000 to \$499,999	\$100,000 to \$249,999	\$50,000 to \$99,999	\$20,000 to \$49,999	Less than \$20,000	All
Number								
Number of farms	18,071	31,463	78,429	208,455	201,062	269,509	1,256,921	2,063,910
Thousand dollars								
Gross cash income	62,213,241	30,315,805	34,733,779	48,399,882	21,569,511	12,036,557	11,321,311	220,590,083
Cash receipts from marketings	59,886,494	28,609,711	32,127,594	44,340,940	19,581,070	10,373,704	7,419,480	202,338,993
Crops	25,930,620	17,025,267	19,809,116	24,887,235	11,583,834	6,308,623	3,880,087	109,424,782
Livestock	33,955,874	11,584,444	12,318,479	19,453,705	7,997,236	4,065,081	3,539,393	92,914,211
Government payments	282,982	690,818	1,378,234	2,125,109	841,979	808,752	1,157,667	7,285,541
Farm-related income	2,043,765	1,015,276	1,227,951	1,933,833	1,146,462	854,101	2,744,165	10,965,550
Cash expenses	40,466,908	18,799,657	25,016,856	35,268,741	15,450,452	10,380,940	15,265,633	160,649,172
Net cash income	21,746,333	11,516,148	9,716,923	13,131,141	6,119,059	1,655,616	(3,944,322)	59,940,902
Percent								
Number of farms	0.9	1.5	3.8	10.1	9.7	13.1	60.9	100.0
Gross cash income	28.2	13.7	15.7	21.9	9.8	5.5	5.1	100.0
Cash receipts from marketings	29.6	14.1	15.9	21.9	9.7	5.1	3.7	100.0
Crops	23.7	15.6	18.1	22.7	10.6	5.8	3.5	100.0
Livestock	36.5	12.5	13.3	20.9	8.6	4.4	3.8	100.0
Government payments	3.9	9.5	18.9	29.2	11.6	11.1	15.9	100.0
Farm-related income	18.6	9.3	11.2	17.6	10.5	7.8	25.0	100.0
Cash expenses	25.2	11.7	15.6	22.0	9.6	6.5	9.5	100.0
Net cash income	36.3	19.2	16.2	21.9	10.2	2.8	-6.6	100.0
Dollars								
Per farm operation: 1/								
Gross cash income	3,442,686	963,547	442,871	232,184	107,278	44,661	9,007	106,880
Cash receipts from marketings	3,313,931	909,321	409,641	212,712	97,388	38,491	5,903	98,037
Crops	1,434,919	541,125	252,575	119,389	57,613	23,408	3,087	53,018
Livestock	1,879,012	368,196	157,066	93,323	39,775	15,083	2,816	45,019
Government payments	15,659	21,957	17,573	10,195	4,188	3,001	921	3,530
Farm-related income	113,096	32,269	15,657	9,277	5,702	3,169	2,183	5,313
Cash expenses	2,239,312	597,522	318,976	169,191	76,844	38,518	12,145	77,837
Net cash income	1,203,374	366,025	123,895	62,993	30,434	6,143	(3,138)	29,042

1/ Farm operations may have several households sharing in the earnings of the business (for example, partners or shareholders in the farm corporation). The number of households per farm operation tends to increase ■■ sales per farm increase.



# **Debt Repayment Ability Improves, With Higher Income Levels and Favorable Interest Rates Offsetting Larger Debt**

Total farm business debt rose by almost \$6 billion during 1996, reaching nearly \$157 billion, its highest level since 1986 (USDA). The 1996 rise in debt was the largest in absolute terms since 1982, and the largest percentage gain since 1981. It follows increases of \$4 billion in 1995, almost \$5 billion in 1994, and about \$3 billion in 1993. Though farm debt has risen almost \$17.5 billion since 1992, a generally favorable interest rate environment has kept interest payments reasonable, and relatively high income levels have provided farmers with the cash to meet debt payments.

Despite added borrowings, farm operations' ability to service their debt obligations improved in 1996, as higher net cash income and modestly declining interest rates lessened the impact of the increase in farm debt.

Operators with debt are, in effect, using a portion of their credit capacity. Debt repayment capacity utilization, the ratio of actual debt to the maximum amount of debt supportable by net cash income available for loan payments, measures the extent to which farmers are using their potential credit repayment ability. (See AIS-58 for a description of this measure). A rise in utilization indicates that debt has increased faster than farmers' ability to repay, while a fall suggests that income is growing at a rate that allows easier repayment of debt, even though debt levels may be rising.

The 1996 net cash income gain of nearly \$9 billion was not materially reduced by the interest expense rise of about \$0.5 billion. Although rising in the middle of the year, average annual interest rates on new bank loans decreased from 9.5 percent in 1995 to 8.4 percent in 1996. Despite the substantial rise in debt, farmers did not borrow as much as they could have with the additional cash available to debt service. Debt repayment capacity utilization fell from about 56 percent in 1995 to less than 49 percent in 1996, as the relatively high 1996 net income more than compensated for rising debt and interest expense. For the first time since 1993, farmers ended 1996 owing less than half of the amount that they apparently could repay from their current incomes.

## ***Expanding Operations Using More Cash Than Debt***

Farm mortgage debt rose about 3 percent in 1996, a relatively modest increase given the rise in the value of farm real estate. Nominal land values have been rising annually since 1987, and, in some Corn Belt States, the rate of growth has exceeded 10 percent in recent years.

Anecdotal evidence suggests that the price of land has been bid up by farmers seeking economies of size through expansion. However, these purchases of adjacent acreages by existing operations have been predominantly cash transactions. Land prices have risen in response to improved outlook for the sector, rather than as a result of rapid credit-financed expansion. While farm debt is rising, it does not appear to be increasing as rapidly as land values.

Traditional lenders are competing effectively for new mortgage loans. Banks' real estate loan balances were up 5 percent in 1996. While this growth rate was relatively low compared with banks' gains in recent years, it remained the highest reported by any lender. Life insurance mortgages rose over 4 percent in 1996, and Farm Credit System (FCS) real estate debt increased about 3.5 percent. Life insurance companies and FCS experienced the first substantial increases in demand for their credit products in recent years.

## ***Nonreal Estate Debt Rising More Rapidly Than Mortgage Debt***

Farm business nonreal estate debt increased over 4.5 percent in 1996, and has risen over 17 percent from the beginning of 1993 through the end of 1996. During this same period, farm mortgage debt increased about 8 percent. This is due partially to the growing use of favorable credit terms offered by machinery manufacturers and input suppliers. While supplier credit originated as a means of increasing sales, the finance units providing this service have now developed into significant profit centers for their companies.

The relative shift from real estate credit also reflects a rise in cash sales of farmland, which has reduced the demand for mortgages. Simultaneously, farmers' improved financial condition means that lenders are no longer requiring maximum securitization of short- and intermediate-term loans.

## ***Farm Credit System Reports Solid Growth***

The growth rate of FCS total farm loans outstanding increased from 1 percent in 1994 to 6.5 percent in 1996. Rapidly rising nonreal estate loan volumes have accounted for much of the recent increase. Nonreal estate loans rose 6 percent in 1994, and 12 percent in 1995 and 1996. FCS now accounts for almost 19 percent of all nonreal estate loans, its largest share of this market since 1984.

Farm Credit System real estate lending has not grown at a similar pace. However, after declining annually in all but one year during 1984-94, FCS real estate lending posted a

modest gain in 1995, and a 3.5-percent rise in 1996. The FCS has recently emphasized convenience in loan application and short approval time on smaller mortgage loans, attempting to gain a larger share of the part-time and lifestyle farm markets.

### Farm Debt Outlook for 1997

Total debt is projected to rise another \$5 billion in 1997. Modestly higher interest rates may add to the negative impact of this continuing increase in debt on farm incomes. Reduced income levels will be further pressured by rising interest expenses.

Taken together, these factors indicate that indebted farm operators will face a slightly less favorable financial climate in 1997. While lower commodity prices will translate into reduced receipts for many farm operations, most will have adequate income available to meet principal and interest payments on their loans. Reduced incomes and less favorable interest rates in 1997 suggest that some farmers may find it more difficult to service higher debt levels, as evidenced by the rise in debt repayment capacity utilization from 49 percent in 1996 to a projected 55 percent in 1997. However, there is little evidence that growing debt levels in 1997 will precipitate a recurrence of widespread financial stress in the sector.

Farmers may face reductions in government support levels once the transition payment period ends. Recent price declines for grains and other commodities have reminded farmers that farm product prices may not maintain lofty

levels indefinitely. Therefore, farmers appear to have taken advantage of recent high income levels to improve their operations' balance sheets, rather than leveraging the favorable income levels to acquire additional resources through debt-financed expansion.

While nonreal estate debt is expected to increase over 3 percent in 1997, banks' reported early season demand for non-real estate credit was up less than 2 percent. Farmers who benefitted from favorable conditions in 1996 may have adequate cash available to begin the 1997 season without drawing on operating credit lines.

Figure 14  
Interest expenses rising since 1994,  
but below the early 1980's

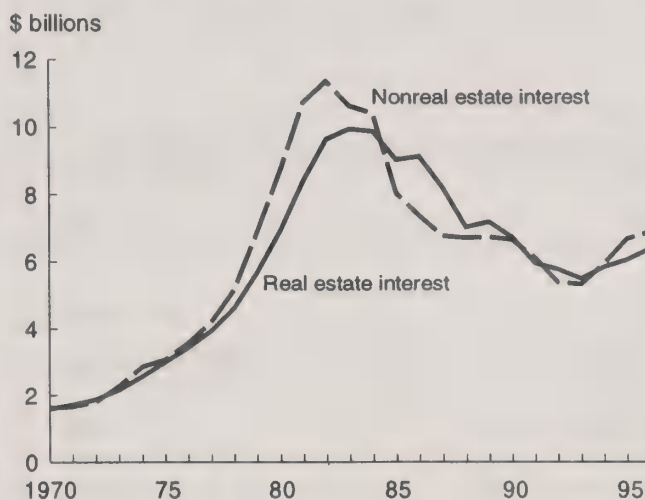


Figure 13  
Farm business debt continues rising  
... but still below early 1980's

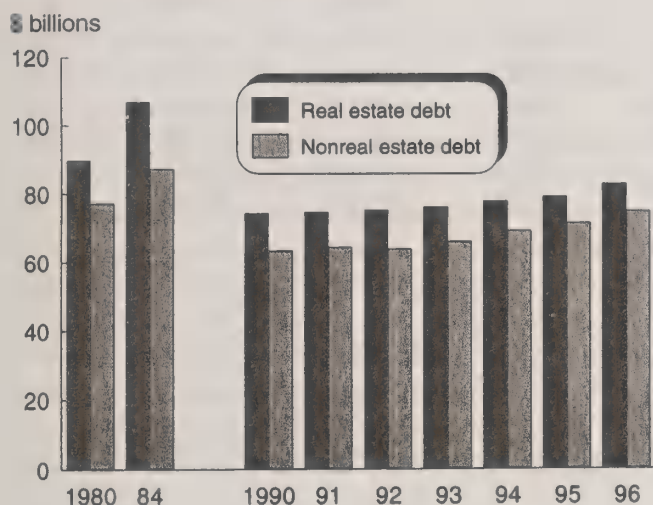


Figure 15  
Banks' share of farm business credit stable,  
Farm Credit System's share rising rapidly

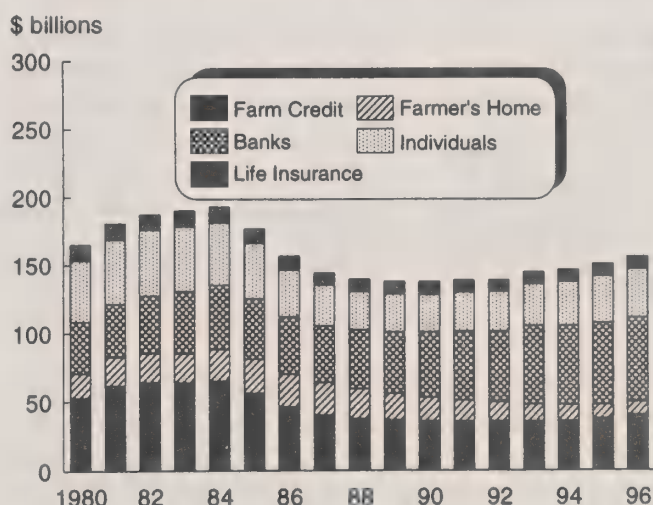




Figure 16

### Farm operators' actual debt and debt repayment capacity

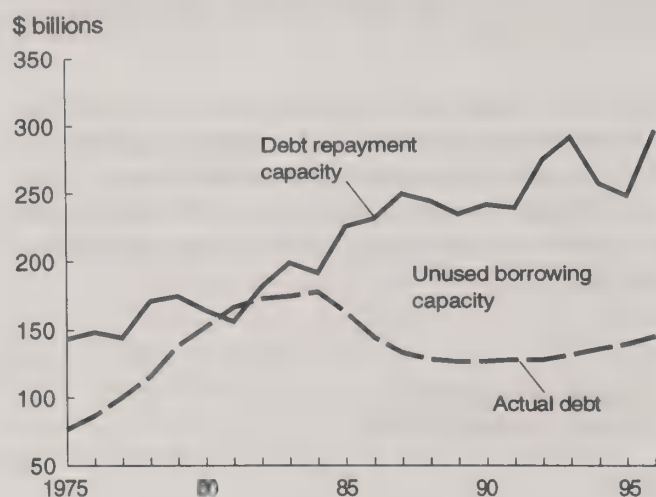


Figure 17

### Utilization of debt repayment capacity lower in 1996, remaining in acceptable range

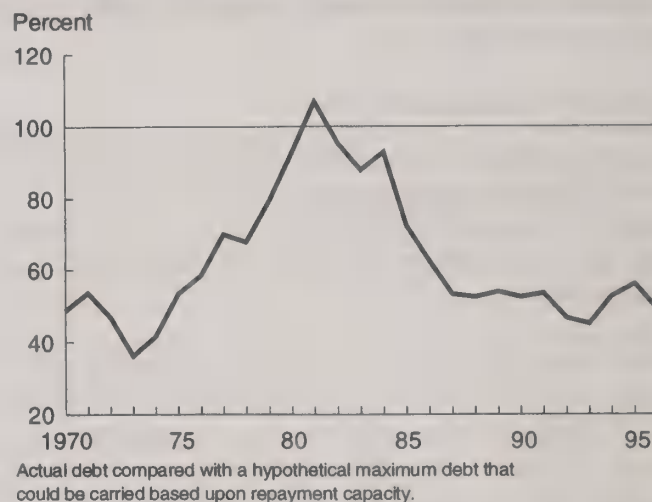


Table 6--Farm debt, December 31, selected years, 1984-96

Lender	1984	1988	1992	1995	1996F	Change 1995-96
Million dollars						Percent
Real estate	106,697	77,833	75,421	79,287	82,724	3.1
Farm Credit System	46,596	28,445	25,408	24,851	25,851	3.5
Farm Service Agency 1/	9,523	8,980	6,394	5,055	4,654	-7.9
Life insurance companies	11,891	9,039	8,765	9,092	9,469	4.2
Commercial banks	9,626	14,434	18,757	22,277	23,394	5.0
CCC storage facility	623	21	2	*	*	*
Individuals & others	28,438	16,914	16,095	18,012	18,481	2.6
Nonreal estate	87,091	61,734	63,613	71,482	74,799	4.6
Commercial banks	37,619	28,309	32,912	37,748	38,475	1.9
Farm Credit System	18,092	8,766	10,346	12,472	14,015	12.4
Farm Service Agency 1/	13,740	12,899	7,143	5,092	4,865	-4.5
Individuals & others	17,640	11,760	13,230	16,170	17,444	7.9
Total debt	193,788	139,567	139,052	150,769	156,523	3.8
Farm Credit System	64,688	37,211	35,753	37,324	39,740	6.5
Farm Service Agency 1/	23,263	21,879	13,538	10,147	9,519	-6.2
Commercial banks	47,245	42,742	51,669	60,025	61,869	4.2
Life insurance companies	11,891	9,039	8,765	9,092	9,469	3.1
Individuals & others	46,701	28,694	29,327	34,182	35,925	5.1

1/ Formerly Farmer's Home Administration.

Farm business debt outstanding as of December 31. \* = less than 500,000.

F = Forecast.

## Although Input Expenses Rose in 1996, Strong Market Prices Led To Higher Net Returns

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### ***Acreage and Prices Generally Up for 1996 Crops***

Acres planted to major U.S. crops in 1996 were up 5.1 percent over 1995 and were at the highest in 10 years. Harvested acreage also rose (4.2 percent) and was also at its highest in 10 years. Farmers planted 11.6 percent more corn, 9.4 percent more wheat, and 2.6 percent more soybeans. At the same time, acres planted to cotton, rice, sorghum, and sugarbeets fell.

Despite production increases for many crops, prices generally remained high. The overall prices received index for crops was up 12.5 percent for 1996 over 1995.

### ***Input Prices Also Up***

The 1996 prices paid index for general inputs was up an average 5.5 percent, with wide variation among individual inputs. Fertilizer prices rose only 3 percent, as did chemical prices. Fuel prices, however, jumped nearly 12 percent over the relatively steady prices of the previous 4 years.

How these input prices affected individual crop and livestock commodities depended on each enterprise's input mix. Feed prices were up an average 25 percent; exacerbating the trend toward lower cattle prices meant lower net returns to cattle producers. The same higher feed prices meant higher net returns to feed-grain producers.

### ***New Survey Data***

New survey data for grain sorghum, peanuts, and burley tobacco underlie the 1995 and 1996 estimates for those crops. In addition to the new data, the accounting framework and methodology for burley tobacco has been changed to reflect that of other field crops. Next year, the last two commodities, flue-cured tobacco and cow-calf production, will be brought into methodological consistency with the other Cost-of-Production commodities. New analyses are also available electronically for oats, sorghum, and peanuts. These short reports (titled Farm Business Economics Indicators Updates) provide preliminary analyses of the production systems used in growing these crops. The reports can be found on ERS' Internet website at <http://www.econ.ag.gov/briefing/fbe> in the publications section.

### ***Cost and Return Highlights By Commodity, 1996***

**Corn**—Unique market conditions in 1996 resulted in record returns to corn production. The average corn yield improved in 1996 to about 5 percent above the previous 5-year average. Despite higher yields, corn prices remained near \$3.00 per bushel at harvest. This combination of relatively high prices and yields pushed the value of corn at harvest to a record high of \$389 per acre. Average returns above cash costs, at \$166 per acre, were also the highest reported by USDA since the costs and returns series began in 1975. Residual returns to management and risk (\$22 per acre) were positive for the first time since 1980. Record returns to corn production in 1996, coupled with only a modest rise in costs, provided incentives for expanded acreage in 1997, but lower prices late in 1996 dampened expectations for 1997.

**Soybeans**—Both prices and yields of soybeans moved higher in 1996, resulting in record returns. Soybean prices rose above \$8 per bushel in 1996 and settled near \$7 at harvest, up about 10 percent from 1995. Yields were up slightly, somewhat above the previous 5-year average. Higher prices and yields sent the value of soybeans at harvest above \$250 per acre, a record high. Likewise, average returns above cash costs, at \$130 per acre, were the highest reported since 1975. Residual returns to management and risk were the highest reported since 1979. While costs showed only a modest increase, the record returns to soybean production in 1996 suggested incentives for expanded 1997 acreage that were spurred by rising prices in early 1997.

**Wheat**—U.S. farmers planted wheat on 75.6 million acres and produced about 2,282 million bushels, up 4.5 percent from 1995. However, harvested area and production of winter wheat dropped because of a harsh winter over major winter wheat growing areas, followed by drought conditions, especially in the Central and Southwest States. The area and production of spring wheat (including durum) increased because of mostly good to fair growing conditions and then dry weather at harvest time.

Total cash costs of producing wheat rose 2.3 percent in 1996, while economic costs rose 6.2 percent. Total economic costs averaged \$5.94 on a per-bushel basis, up 11.6 percent from 1995, primarily due to higher production costs and lower yields.



**Cotton**—U.S. farmers planted an estimated 14.4 million acres of upland cotton in 1996 (down 14 percent from 1995) and harvested 12.6 million acres (down 20 percent). However, higher yields led to about a 6-percent increase in 1996 cotton lint production. In addition, continued strong worldwide demand for cotton has resulted in continued higher market prices. The Southern Plains (particularly Texas) have continued to have weather-related problems which resulted in the abandonment of about 30 percent of the 1996 planted acreage but only a 2-percent reduction in production. The Southeast is continuing to be a strong force in U.S. cotton production.

Total 1996 variable cash production expenses for the United States remained relatively unchanged from 1995. Overall, the prices that cotton producers paid for their purchased inputs were relatively stable from 1995 to 1996. Regional land costs, which were influenced by the higher value of cotton, were slightly higher.

**Rice**—Rice plantings were down in 1996, but yields were record or near-record highs across the Southern producing States. California yields were down slightly due to disease, weed, and weather problems. Production was only slightly above 1995, and lower beginning stocks kept supplies from growing. Continued tight stocks, especially for high-quality long-grain rice, helped boost prices and improve net returns. Increased returns substantially exceeded increased production costs in most areas. Costs were up mainly due to higher seed, fertilizer, and fuel prices.

**Sorghum**—Area planted to sorghum rose almost 40 percent, or 13 million acres, from 1995 to 1996. Production rose 75 percent to just over 800 million bushels. This was slightly higher acreage and slightly lower production than the previous high in 1992. As a result of higher production, the average harvest month price fell from \$2.75 to \$2.70 per bushel from 1995 to 1996. On average yields rose about 23 percent, and both gross value and returns rose as well. Variable cash expenses rose somewhat from 1995 to 1996, but fixed cash and economic costs were relatively unchanged during the period. Although residual returns to management and risk remained negative, they were considerably improved over previous years.

**Barley**—U.S. farmers planted barley on 7.17 million acres and produced about 397 million bushels in 1996. Area planted and production were 7 and 10 percent above 1995, respectively. At the national level, both yields and prices were higher in 1996. Rising input prices increased 1996 total economic costs 8.2 percent. With an average 1996 yield of 54.5 bushels per planted acre, barley growers would have covered all cash costs at \$2.14 per bushel, and total economic costs at \$3.72 per bushel. At the average 1996 harvest period price of \$2.97 per bushel, only those growers with yields of 68.2 bushels or more and costs near the national average would have covered total economic costs.

**Oats**—Oat production continued to slide in 1996 as seeded area fell 26 percent and yields per planted acre increased just 6 percent. As a result, oat prices were up substantially in 1996. Higher values for both oat grain and oat straw boosted total value of production. With value of production strongly exceeding a rise in costs, net returns more than tripled and residual returns to management and risk moved from negative to positive on a national level. Much of the increase in costs was due to higher prices for seed and fuel.

**Sugarbeets**—U.S. farmers planted beets on about 1.37 million acres and produced 26.57 million tons in 1996, 5.3 percent below 1995's production. Yields per planted acre were very similar to those of last year. However, the influence of weather on yields varied among the beet producing regions. Beet yields were slightly higher in all regions except the Great Lakes, where cool summer weather conditions slowed beet development.

Rising input prices resulted in a 2.3-percent rise in total variable cash costs. Hired labor, chemicals, and fertilizers were the major cash expenses, accounting for about 60 percent of total variable costs. In 1996, expenses for these three inputs rose an average 3.5 percent over 1995.

Costs of processing the 1996 beet crop rose 2-3 percent from 1995. Total processing costs are estimated at 12.498 cents per pound, an increase of about 0.3 cent over the previous year.

**Sugarcane**—Total cash expenses for growing an acre of sugarcane in 1996 fell by 1.1 percent. Hired labor is the largest single cost component for growing sugarcane, and lower 1996 wage rates caused labor expenses to fall. Fertilizer expenses also fell due to Florida's growers using more potash than nitrogen. Potash prices fell in 1996 while nitrogen prices rose. The higher nitrogen prices caused USDA's fertilizer prices paid index to rise but had minimal effect on sugarcane growers. Also, beginning in 1995, the Everglades Restoration Tax has been added to Florida costs, raising U.S. fixed costs.

Cane yields were essentially unchanged at the national level. However, lower 1996 sugar recovery rates were responsible for a 3-percent rise in variable cash growing expenses at the cents-per-pound-of-sugar level.

Processing the 1996 crop cost about 2 percent more per pound of sugar than in 1995. Most of this was due to the lower sugar recovery rates.

**Peanuts**—Area planted to peanuts continued falling—down 8 percent from 1995 to 1.4 million acres in 1996. Production was up 5 percent from 1995 levels at 3.6 billion pounds, but still below 1994 levels. Although the quota price was unchanged at \$678 per ton for the 1995 and 1996 crops, the average harvest month price fell from 29 cents per

pound in 1995 to 26 cents per pound in 1996. On average, yields rose 13 percent to 2,443 pounds per planted acre, and returns rose as well. Residual returns to management and risk were positive in 1996—higher gross value combined with lower fixed costs more than offset higher variable cash expenses.

**Flue-cured tobacco**—Adverse weather conditions in the Southeast at harvest time, which prompted concern about shortfalls in supply, boosted early market prices for 1996 flue-cured tobacco. By the end of harvest, however, production was up about 22 percent from 1995. As a consequence farmers sold flue-cured tobacco at higher prices than in 1995. Variable costs of producing an acre of flue-cured tobacco in 1996 averaged \$2,026, up almost 7 percent from 1995. Among the cost components, selling costs (includes warehouse fees, no-net-cost, marketing assessments, and inspection and grading fees) increased the most (17 percent). The next largest expense item change was in fuel-related costs (up 15 percent), followed by chemical costs (up 4 percent). Total 1996 ownership costs per acre declined by about 1 percent (\$564 to \$559). Of the ownership costs, taxes and insurance costs decreased the most (4 percent). Both general farm overhead and land and quota costs increased by 14 and 12 percent, respectively, reflecting the effects of an increase in yield of 218 pounds per acre.

**Burley tobacco**—Burley tobacco production was 29 percent above 1995. The variable costs of producing and selling burley tobacco increased from \$1,249 per acre in 1995 to \$1,343 in 1996. Total fixed costs decreased from 1995 to 1996 by almost \$61 per acre. Selling costs (marketing fees, no-net-cost and marketing assessments, and inspection and grading fees) rose by \$28 in 1996. The largest changes among all individual cost items per acre between 1995 and 1996 were general farm overhead (down 21 percent), and labor (up 15 percent), followed by selling expenses (up 13 percent).

General farm overhead was lower, as were all allocated costs, as a result of burley tobacco's lower contribution to the overall value of production of the farm. While the gross value of production for burley tobacco was higher in 1996 than in 1995, all other farm enterprises together were higher. Land and quota charges increased from \$955 per acre in 1995 to \$1,008, because of both higher yields and market price.

**Milk**—Cash and economic costs of producing 100 pounds (cwt) of milk in the United States in 1996 were up 6 and 3 percent, respectively, from 1995. Most of the increase in costs was due to higher feed costs. Obtaining enough quality forage for the existing herd was a challenge over much of the country. Even concentrate availability became a factor. Very low grain stocks meant no guarantee of a steady flow of concentrate ration of a reasonably constant composition. Supplies of high quality alfalfa were also very tight.

Although 1995 alfalfa production was large, a relatively small share was dairy quality. By the spring of 1996, stocks of good forage were largely exhausted. Cool, wet weather over much of the country delayed hay and pasture development and slashed quality. Later cuttings also had widespread quality problems. High concentrate prices magnified the forage quality problems.

Nevertheless, higher milk prices in 1996 outpaced the increase in costs of grain and other concentrates. Higher milk prices helped boost 1996 returns to dairy farms, particularly for producers who grew their own feed grains or who priced their feed ahead. The U.S. gross value of production less cash expenses rose more than \$1 from 1995. While residual returns to management and risk remained negative, they also posted an improvement of more than \$1 from 1995.

**Hogs**—Higher hog prices during 1996 were mostly offset by higher feed costs. Market hog prices varied in the \$50-\$60 per cwt range during much of 1996, up from \$40 to \$50 in 1995. Feeder pig prices were also up sharply from 1995, mostly in the \$70-\$80 range. However, the higher corn and soybean prices that benefited crop producers offset much of the additional income from higher hog prices. Feed costs rose about 30 percent among all producer types. Average returns above cash costs improved for market hog producers, but changed little for feeder pig operations. Residual returns to management and risk changed little among hog producers and remained negative as it has since 1992. Negative average farm returns to resources used in the hog sector helps to explain the continually declining number of hog operations.

**Cow-Calf**—Cash and economic costs for U.S. cow-calf operations increased in 1996. Producers operated under the pressures of high grain prices, large cattle supplies, bad weather conditions, and poor feedlot returns. While much of the Central Plains and southwestern United States dealt with drought conditions, the northern States experienced unusually wet conditions. Hay supplies were tight due to supplemental drought feeding during the summer. Accumulated pasture growth for grazing last winter largely ended in most areas by early November. Cool, wet weather resulted in disappointing wheat pasture growth, although planted acreage was up sharply and emergence was above average.

While 1996 grain prices held down feeder cattle price gains, tight forage supplies and relatively low feeder cattle prices resulted in continued large cow slaughter. As more beef moved through the market, cattle prices declined. The total gross value of production in 1996 was down 13 percent from the previous year.



Figure 18

**Feed grain production costs**

Dollars per planted acre

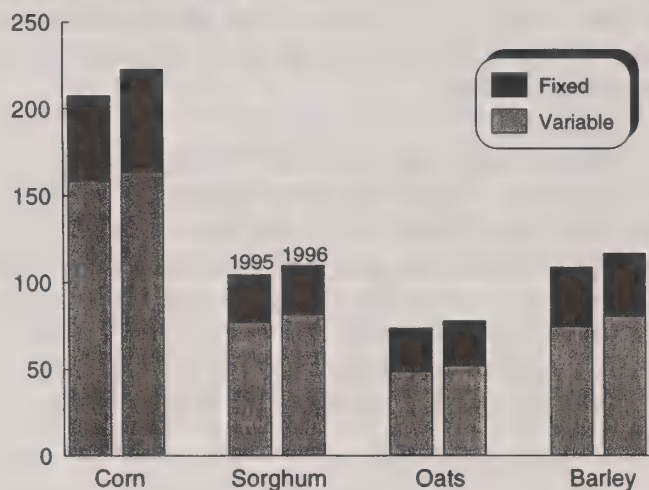
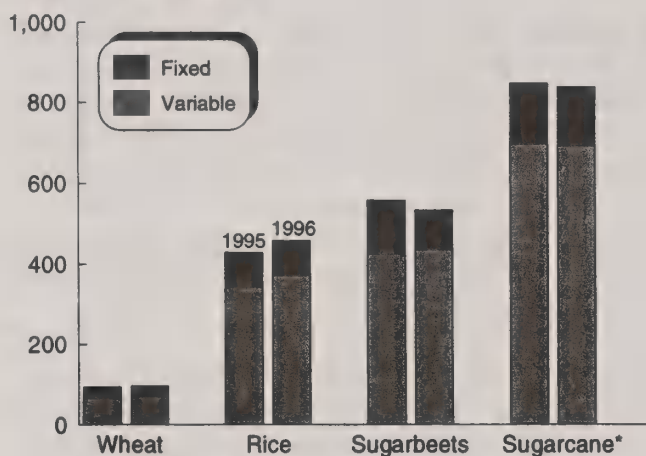


Figure 19

**Food grain and sugar crop production costs**

Dollars per planted acre



\*Sugarcane is in dollars per harvested acre.

Figure 20

**Oilseed and cotton production costs**

Dollars per planted acre

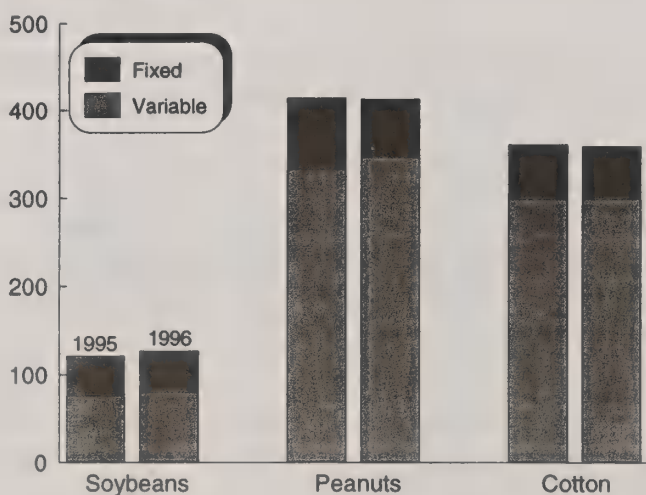


Figure 21

**Hog production costs**

Dollars per cwt gain

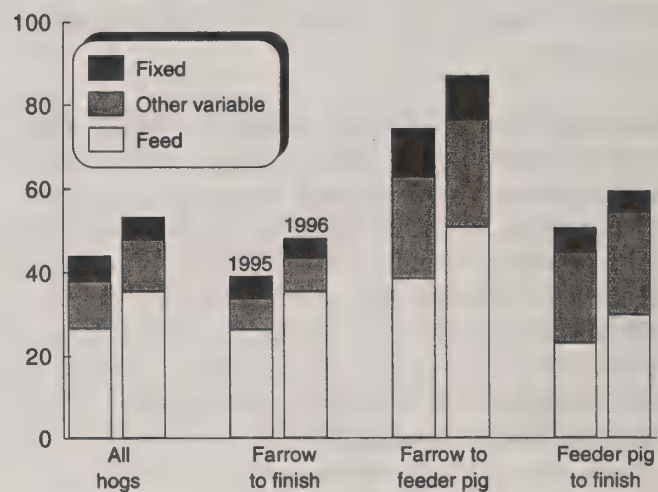


Figure 22

**Cow-calf production costs**

Dollars per bred cow

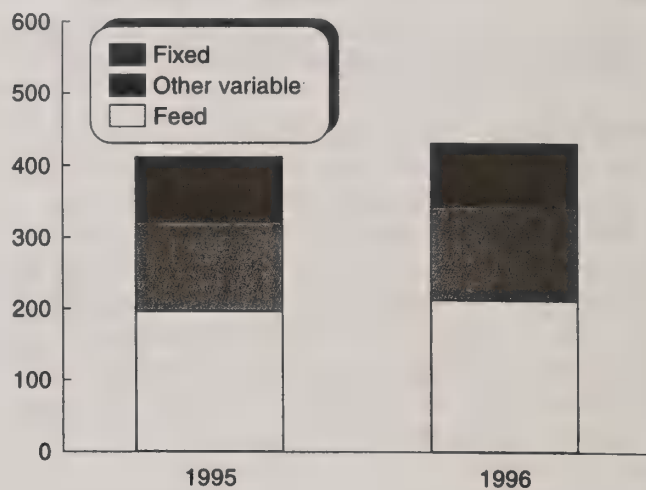


Figure 23

**Milk production costs**

Dollars per cwt

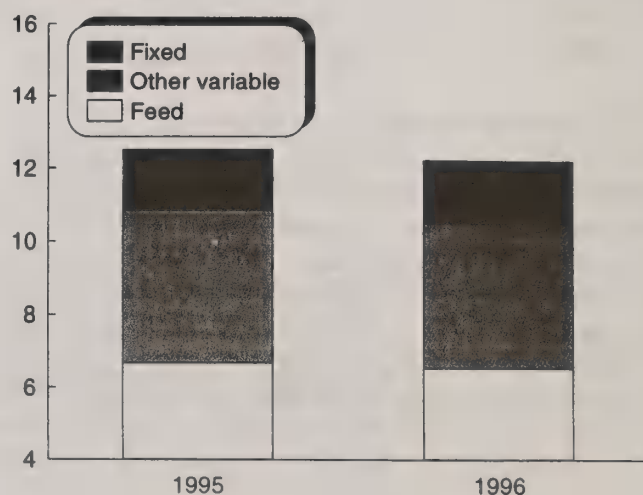


Figure 24  
**Feed grain cash returns**

Dollars per planted acre

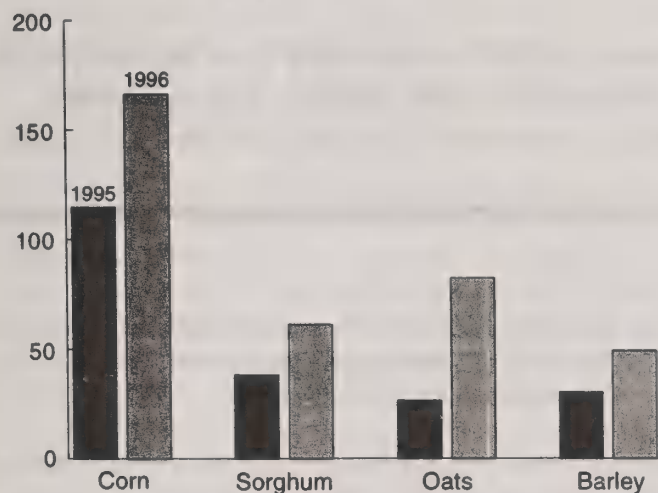
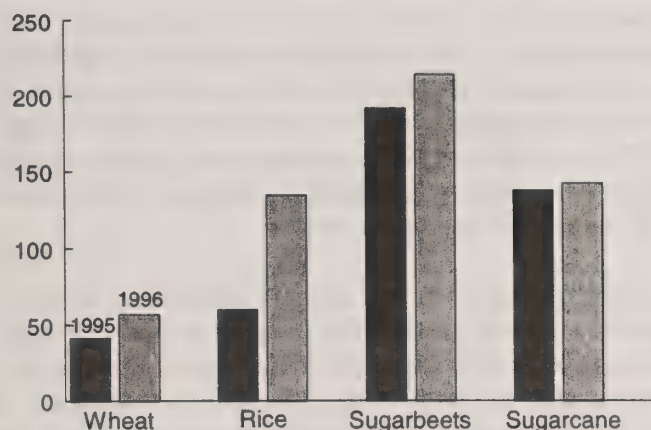


Figure 25  
**Food grain and sugar crop cash returns**

Dollars per planted acre



Note: 1996 prices for sugar have been kept at the 1995 level.  
Sugarcane returns are per harvested acre.

Figure 26  
**Oilseed and cotton cash returns**

Dollars per planted acre

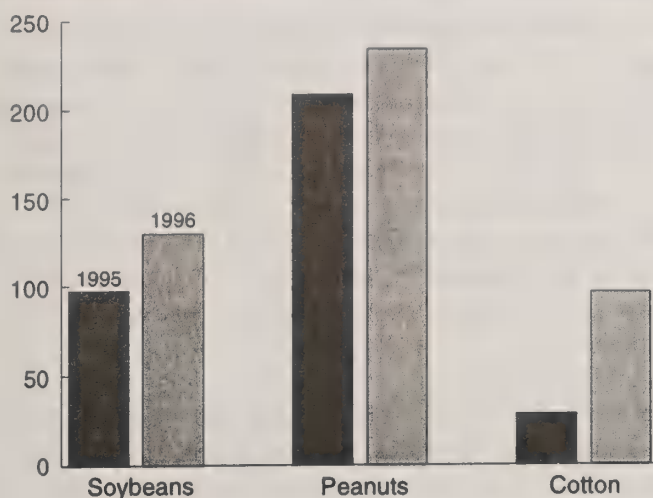


Figure 27  
**Hog cash returns**

Dollars per cwt gain

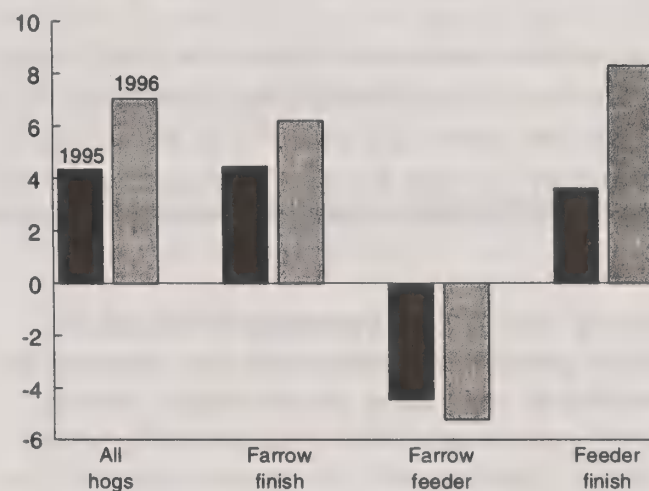


Figure 28  
**Cow-calf cash returns**

Dollars per bred cow

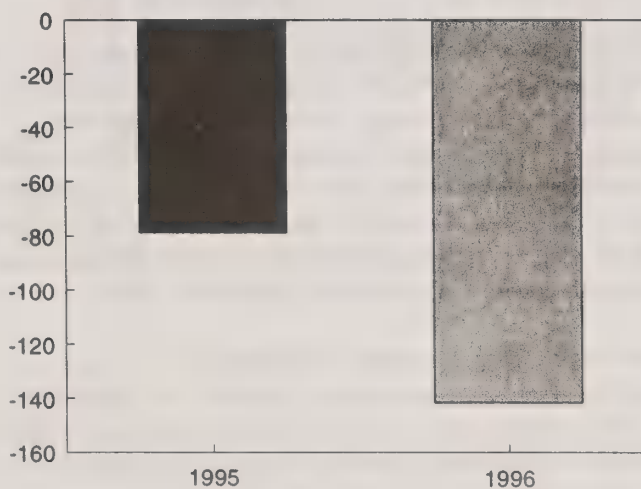
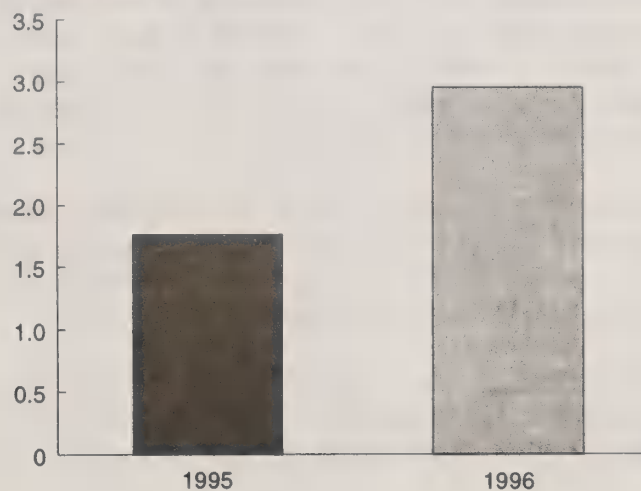


Figure 29  
**Milk cash returns**

Dollars per cwt





## General Economy Strong in 1997, Speedup from Moderate 1996

*Low inflation, moderate interest rates, and strong GDP growth in 1997 are providing good support for the agricultural sector. International events pose the major short-run risks to the domestic macroeconomy. Despite moderate GDP growth and rising oil prices in 1996, macroeconomic events were very favorable to agriculture—as they have been throughout the nineties.*

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***Strong 1997 Gross Domestic Production (GDP) growth and continued low inflation are helping to keep farm income high. Slowing Asian growth and financial instability in the region, together with the appreciation of the dollar, may affect trade in 1998 and beyond.***

U.S. economic growth for 1997 will be about 3.8 percent, stronger than in 1996. Despite faster growth, inflation is modestly lower than last year and interest rates are similar to 1996.

Pressures on farm costs coming from the nonfarm sector are even less than in 1996. The low general and wage inflation and flat to declining energy prices will help keep farm expenses steady. Nonfarm inputs price gains will be small. Economy-wide producer prices dropped sharply in the first half of 1997, and are unlikely to show much of an increase for the year as a whole. In particular, energy and fertilizer prices should be flat or declining relative to 1996.

One source of cost pressure in nonfarm-based inputs is coming from labor. Minimum wage increases and tight labor markets in rural areas will mean modest increases in farm labor costs and labor-intensive services. Tight labor markets are a two-edged sword for farm households, pushing up farm labor costs but also improving off-farm employment and earnings prospects for farm families.

Recent job reports suggest that nonmetro jobs have grown about as fast as jobs in metropolitan areas. This has been the trend since 1991. If it continues, this will be the first economic recovery in the last 25 years where nonmetro job growth has been as fast as metro job growth. This will aid farm families in adjusting to lower government support payments.

As many farm households are substantially dependent on off-farm income, the good rural economy will partly offset a mild decline in farm income relative to 1996. Total farm household income from all sources should be very strong in 1997.

Strong import growth, a result of good income growth and a strengthening dollar, will mean a larger U.S. trade deficit in 1997. This will support growth with our major trading part-

ners. The dollar is expected to average 10 percent higher for 1997 than 1996, as measured by the Federal Reserve Board's trade-weighted exchange rate.

Weak economic performance in Japan, the end of dollar pegging in Southeast Asia (Thailand and Malaysia), and slower income growth in Asia, including China, are a potential drag on farm exports. However, many of the 1997 farm sales to Japan are already in the pipeline. Further, as a developed country, the income elasticity for food imports is low in Japan. High-valued product sales to South Asia will be weak in 1997, but this is a relatively small market for these products. Feed and food grain sales to the region will be only modestly affected. The net impact of the recent Asian macroeconomic events on agriculture will be small in 1997. Commodity market conditions, not global macroeconomic developments, are behind the decline in the value of U.S. agricultural exports in 1997.

Looking beyond 1997, it is hard to find anything in the domestic outlook situation that suggests recession or a significant rise in inflation in 1998. The biggest questions are international, and many of those focus on the adjustment to currency devaluation and somewhat slower growth this year in Southeast Asia and the *uncertain* path of the Japanese economy in coming months.

***Moderate GDP and jobs growth, low producer price inflation, and the continued weak dollar supported a strong gain in 1996 farm income.***

U.S. GDP in 1996 grew by 2.8 percent, somewhat faster than in 1995. Job growth was rapid—payroll employment rose almost 2.0 percent as about 2.3 million jobs were added to the economy. Economic growth in late 1995 and early 1996 was weak enough that the Federal Reserve, apprehensive about a possible recession, lowered the Federal Funds rate (the rate at which banks lend each other money to meet reserve requirements) in January 1996. This cut in short-term rates contributed to accelerating growth late in 1996 and into 1997.

For 1996, the average 3-month T-bill yield fell from 5.5 percent in 1995 to 5.0 percent in 1996. The bank prime rate moved in lock-step with the short-term rates. Fed policy has

its largest impact on short-term rates. The average 10-year Treasury bond yield, a measure of longer term interest rates, averaged 6.4 percent, essentially unchanged from 1995.

Crude oil prices at the end of 1996 were up almost 30 percent from the end of 1995. While some analysts had expected higher energy prices to lead to a general price rise, inflation actually slowed from 1995's rate.

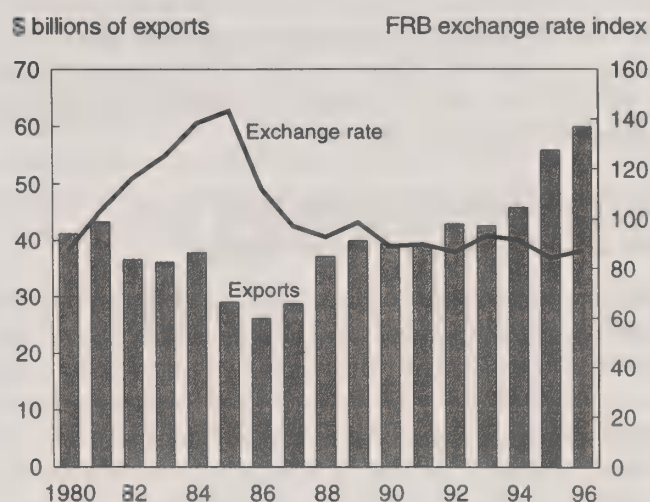
The interest rate and inflation environment supported farm income by holding down the increase in farm production costs during 1996. Higher energy prices were the largest cause of cost increases coming from outside agriculture. The large boost in energy costs kept fertilizer prices high and caused fuel prices to rise sharply. However, much of the fuel was purchased in the first half of the year before fuel prices rose. Electricity prices rose as utilities passed on their higher energy costs. Largely because of higher energy prices, manufactured inputs expenses rose 8.5 percent in 1996.

General inflationary pressures had much less of an impact on the prices of other nonfarm inputs. Wages rose less than 3 percent, and marketing, storage, and transportation costs fell by 5 percent.

The dollar, while appreciating about 3.4 percent, was still relatively low compared with the 1980's. The weak dollar and improving world growth in 1996 helped boost farm exports and supported crop prices.

Strong foreign GDP growth boosted demand from key foreign markets during 1996. Asian growth continued to lead world economic growth, led by China's growth of nearly 10 percent. Mexico recovered from the peso crisis with GDP growing 5.1 percent. This economic growth, particularly in the developing economies, is an important factor in the growth in U.S. exports of feed grains, soybeans, meat, and other high-valued products.

Figure 30  
**U.S. agricultural exports and exchange rate, 1980-96**  
*Cheaper dollar favorable to farm exports*





# **Agriculture Likely To Produce Strong 1997 Income—Though Earnings Not Expected to Equal 1996 Record**

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The Economic Research Service (ERS) forecasts 1997 farm net cash income will be close to the 1990-96 average of \$54 billion, down from the nearly \$60 billion record level now estimated for 1996. Net cash income does not consider changes in farm inventories of crops and livestock. Net farm income, which does include changes in farm inventories, is also forecast close to its 1990-96 average of \$44 billion following a record \$52 billion for 1996. The September update of the 1997 forecasts of both net cash and net farm income remain near June's forecast.

## ***Crop Receipts To Decline from 1996, But Should Remain Near Record***

ERS forecasts that farmers will earn slightly less from 1997 crop sales than the record \$109 billion for 1996. Lower feed grain prices due to expanding grain supplies explain most of the expected decline. Thus far in the 1990's, farmers have earned an average \$91 billion per year from crop sales, which provided 46 percent of their gross cash income.

Lower corn receipts are expected for 1997. Before the 1996 harvest, U.S. corn stocks had dipped to just 5 percent of annual use for feed, seed, and exports, compared with an average 17 percent before the 1990-95 harvests. Production in 1996, although not a record, was well above average, allowing stocks to rebuild to 11 percent of annual use. With the 1997 corn harvest expected to be as large as 1996, stocks should remain around 10 percent of annual use. Corn prices for the first quarters of 1997 were already considerably lower than the same period for 1996, and despite the good crop this year, farmers are expected to earn less from corn in 1997 than the record \$21.5 billion earned in 1996. Even so, farmers' 1997 earnings from corn should be well above their average annual \$16 billion during 1990-95.

Following corn, wheat is forecast to be the second largest negative year-to-year influence among crops on changes in 1997 from the prior year's levels of farm income. Farmers have produced the biggest wheat crop in 1997 since 1990, increasing stocks for the second year from the low levels reached before the 1996 harvest. Wheat prices are likely to fall to well under 1996 levels, pushing wheat receipts well below 1996. Still, wheat receipts for 1997 are likely to be more than the \$7.8 billion annual average for 1990-96.

Soybeans will be the crop with the largest positive year-to-year influence on 1997 farm income. Acreage increased substantially in 1997 and is forecast to produce a record soybean crop. In contrast to corn, strong export demand by countries such as China, is expected to prevent large price

declines. If soybean prices continue to be strong, in combination with abundant production, 1997 soybean receipts will be well above its \$12.5 billion 1990-96 average, possibly even a new record.

## ***Livestock Receipts Forecast Higher Than in 1996***

Livestock receipts in 1997 should increase from the \$93 billion attained in 1996. Higher beef cattle prices—a product of reductions in the beef herd—will be the most important influence. This should be the turnaround point from the 3 years of steady decline in cattle and calf receipts. Yet, the expected value of cattle sales will not reach the average of \$36 billion for the 1990's.

Receipts for hogs are forecast up, but dairy receipts are forecast down. With hog production expected to be at least as high as in 1996, hog receipts in 1997 will exceed the \$12.6 billion achieved in 1996 and possibly set a record. For perspective, hog receipts averaged \$11 billion in 1990-96.

Dairy could have the largest negative influence on changes in 1997 farm income for 1996 of any type of livestock. Consumer demand for cheese and other dairy products was strong in 1996, partly due to the robust economy, while dairy production dipped slightly. This led to the highest dairy prices in the 1990's. Dairy prices are forecast to decline in 1997 as milk production increases slightly, causing dairy receipts to dip below the \$23 billion reached in 1996. They should remain, however, above the \$19 billion 1990-96 average.

Propelled in part by growing export sales to the countries of the Newly Independent States and China, poultry receipts have increased each year since 1992. In 1997, poultry receipts could be slightly higher than the record \$22 billion in 1996, and possibly exceed dairy receipts for the first time. Poultry receipts averaged \$17.5 billion a year during the 1990's.

## ***Government Payments Will Change Little in 1997***

Government payments to farmers in 1997 will be close to the \$7.3 billion of 1996. During 1990-96, farmers received 5 percent of their cash income from government payments, which averaged about \$9 billion per year. For the second year, the 1996 Federal Agriculture Improvement and Reform Act will largely determine how much payments farmers

receive, though transactions still pending from the previous farm legislation will have some influence.

### ***Total Production Expense Forecast Moderately Higher in 1997***

Total farm production expense, used to calculate net farm income, could increase less in 1997 than the 4-percent increase in 1996. Lower feed prices is the major factor dampening production expenses. Higher prices for labor and feeder livestock are forecast to be among the strongest upward pressures on farm expenses.

Feed is the largest single farm production expense, averaging \$22 billion in 1990-96. Lower corn prices should reduce 1997 feed expenses from the record high of 1996. Farmers devote 15 percent of their feed dollars to shelled corn, and corn is also an important ingredient in mixed feeds.

Feeder livestock, young livestock to feed for later resale, are among the largest farm input expenses, averaging \$13 billion during 1990-96. Young beef cattle account for about 80 percent of the total. The higher beef prices that are expected to increase cattle producers' receipts in 1997 will also drive up feeder cattle prices, resulting in higher 1997 feeder livestock expenses than in 1996 when beef cattle prices were lower.

Farm labor expense, averaging \$15 billion per year during 1990-95, is forecast to increase for the sixth consecutive year in 1997. The increase will come largely from higher wages rather than from a higher number of people employed on farms. The strong national economy is creating increased competition for workers in 1997, and farmers may have to pay higher wages to compete.

### ***Farm Assets, Debt, and Equity Keep Rising As Farm Income Grows***

The value of farm sector business assets rose 6.2 percent in 1996 to \$1 trillion. Farm asset values are expected to grow another 4.5 percent in 1997, supported by growth in returns to farm assets.

### ***Farm Real Estate Values Rising***

Expectations for continued strength in farm income and agricultural exports and stable interest rates are key factors supporting strong demand for farmland, machinery and equipment, and other farm assets. Farm real estate asset values are expected to increase 5.3 percent in 1997. This is slightly less than the projected 7.4 percent increase in 1996.

Nonreal estate assets are expected to rise about \$34 billion (1.5 percent) in 1997. The value of machinery and equipment, inventories of crops and purchased inputs, and financial assets are all expected to rise slightly. However, the

value of livestock and poultry inventories is expected to decline.

### ***Farm Debt To Expand by \$5 Billion in 1997***

Total debt is forecast to rise another \$5 billion in 1997. Total farm business debt rose by almost \$6 billion during 1996, reaching nearly \$157 billion, its highest level since 1986. The 1996 rise in debt was the largest in absolute terms since 1982, and the largest percentage gain since 1981. It follows increases of \$4 billion in 1995, almost \$5 billion in 1994, and about \$3 billion in 1993.

### ***Farm Sector Equity Growth Continues***

The nominal value of farm business equity has risen for more than a decade. Significant gains are expected in 1997 as farm asset values rise faster than farm debt. Farm sector equity in 1997 is expected to be almost \$100 billion more than in 1995, and over \$300 billion greater than in 1985.

If the farm equity estimates are adjusted for inflation, the real value of farm sector wealth in 1997 is still \$519 billion below the inflation-adjusted value of farm equity in 1980. Dividing the dollar value of farm equity by the 1992 Gross Domestic Product (GDP) deflator for each year yields an estimate of "real" farm equity in constant 1992 dollars. Accordingly, real farm equity in 1997 is forecast to be \$832.1 billion. Real farm equity peaked at \$1.4 trillion in 1980.

### ***Debt-to-Asset Ratio Continues Downward***

Solvency indicators remain favorable for 1996 and 1997. The debt-to-asset ratio indicates the relative dependence of farm businesses on debt and their ability to use additional credit without impairing their risk-bearing ability. The debt-to-asset ratio is forecast to be 14.9 percent in 1997, compared with 15.0 percent in 1996. The debt-to-asset ratio has changed markedly from 1985 when the debt-to-asset ratio was 23 percent. The debt-to-equity ratio is forecast at 17.5 percent in 1997, compared with 17.7 percent in 1996.

### ***Farm Sector Investments Remain Profitable***

Rates of return on farm assets and equity are indicators of the profitability of farm investments. Rates of return on assets and equity from current income (excluding capital gains) rose in 1996. Total rates of return on farm business assets (current income plus real capital gains) are estimated at 5.9 percent in 1996 (4.2 percent growth in current income and 1.7 percent growth in real capital gains). However, the lower farm income forecast, and the continued rise in farm sector assets and equity values, suggest slightly lower rates of return in 1997. Total returns on farm business assets are forecast at 5.2 percent in 1997 (3.5 percent growth in current income and 1.7 percent growth in real capital gains).



## Debt-to-Net Cash Flow Improves

Net cash flow measures the net cash resources available to farm businesses for investment in the sector, and to meet current debt obligations. Net cash flow, unlike net cash income, accounts for both internal and external sources of funds.

Net cash flow (after interest expenses) is defined as:

Net cash income

+ change in farm business debt

+ net change in other financial assets

+ net rent to nonoperator landlords (excluding capital consumption)

- capital expenditures (excluding operator dwellings)

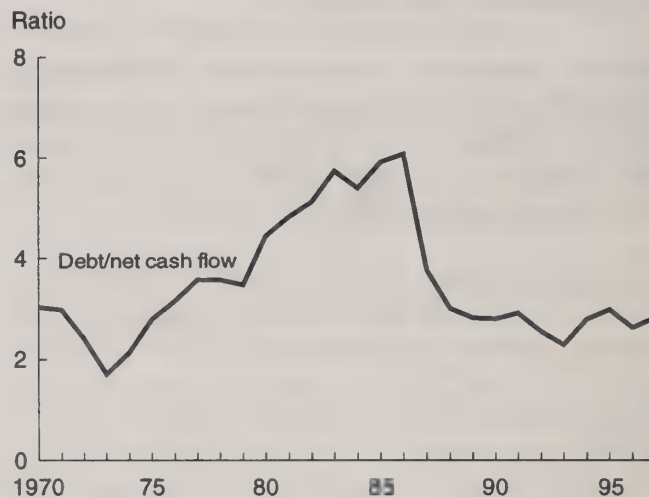
- interest expenses (excluding operator dwellings)

As farm debt and interest expenses have fallen since the end of the "farm financial crisis" of 1980-86, the ratio of debt-to-net cash flow (after interest expenses) fell from as high as 6.0 to 2.3 in 1993, below the pre-boom 1970-74 average of 2.4. However, this ratio rose to nearly 3.0 percent in 1994 and 1995 as debt levels rose and growth in net cash flow

moderated. The ratio of debt-to-net cash flow fell, once again, to 2.5 in 1996 as net cash flow grew faster than farm debt. A marginal rise to 2.9 is forecast for 1997, but this is still within the 2 to 3 "historic low" range. According to this measure, farm investors have ample cash resources to buy farmland and farm machinery and to meet current debt obligations.

Figure 31

**Debt-to-net cash flow, 1970-96, with 1997 forecast**  
*Debt to net cash flow reasonably stable in 1990's*



## Introduction of Size Class for Value-Added Accounts

by

Roger Strickland and Cheryl Steele

The United States Department of Agriculture (USDA) publishes its income accounts disaggregated by size-class in order to provide an additional perspective on the activities and participants in U.S. farming operations, which supplements the information in the Sector accounts. This additional information enables a more complex analytical evaluation of the economics of the U.S. agricultural sector. At this time, a disaggregation of the value-added accounts into size-class accounts is being developed to complement the traditional cash income size-class information (tables 7 & 8). Value-added is a production-based measure, i.e., the creation of new income through production; while cash income is a measure of solvency, i.e., ability to meet current debt repayment and family-living obligations. Thus, important new information is made available in size-class accounting, permitting a more complete evaluation of the sector.

The account component "final agricultural sector output" is the total of all production from resources controlled by farming operations. In table 7, 29 percent of final output was produced by eight-tenths of one percent of all farms, which are those with production valued at \$1 million or more. At the other end of the spectrum, the smallest 61 percent of farms (less than \$20,000 of production) generated 7 percent of the farm sector's output. When combined, the three largest size-classes for farms, with production in excess of \$250,000, comprised 5.8 percent of farm operations and accounted for 56 percent of production. Thus, the U.S. farm sector has two distinct groups of producing operations defined as farms—the less than 10 percent of farms that create a majority of production and a majority of farms that create less than 10 percent of production. A complete interpretation of all the information generated by the size-class table is beyond the scope of this publication, but some important facts and relationships pertaining to these two bi-polar groups will be identified and discussed, which hopefully will serve as a guide to readers in mining the statistics for additional information.

**Distribution of production:** Converting the values expressed in table 7 into percentages of the national totals, it is apparent that the shares of production of crops and livestock originating from the two groups is about the same, with the larger farms producing a majority of each.

Livestock production is a little more concentrated on the larger farms, reflecting economies of size available in production of poultry, hogs, milk, and beef feedlot operations. Services and forestry production presents a contrast, but that is due primarily to the influence of "gross imputed rental value of dwellings." There is a correlation between the number of farms and the number of farm dwellings; and consequently, gross imputed rental value of dwellings comprises almost half of the "services and forestry" account.

	Production of \$250,000 or more	Production of less than \$20,000
	Percent	
Number of farms	5.8	60.6
Crop output	56.6	3.6
Livestock output	61.9	4.3
Forestry and services	31.3	32.7
Total of all output	56.5	6.7

**Productivity is higher on larger farms:** The larger farming operations are more efficient in production activities than the smaller operations in that they produce a larger share of the output with a smaller share of the costs, as is evidenced in the following distributions developed via conversions of the values expressed in table 7 into percentages of the national totals. Producing 56 percent of the total output, the larger operations generated 60 percent of the gross value-added, indicating that they expended proportionately less on intermediate consumption outlays. The larger operations produced 68 percent of net value-added via considerable savings on capital consumption, as the smaller operations have a disproportionate share of motor vehicles and buildings relative to their value of production. The larger operations earned 79 percent of net farm income for their operators, indicating higher productivity in the employment of factors of production: land, labor, and capital.



	Production of \$250,000 or more	Production of less than \$20,000
	Percent	
Number of farms	5.8	60.6
Total of all output	55.4	6.7
Gross value-added	60.3	3.3
Net value-added	68.3	-4.0
Net farm income	79.0	-13.9

**Factor payments:** Expenditures for the factors of production (hired labor, rented land, and borrowed capital) reflect significant structural differences in the large and small farming operations. The operator and family members furnish most of the labor required on the small operations; and as a group pay only 3.5 percent of the sector's total labor costs. It logically follows that the largest operations would have to incur a large share (75 percent) of the sector's labor costs, as not only is the labor input from the operator and family limited but management activities may be a more profitable use of their time. Likewise, the smaller operations pay an even smaller share of the net rental payments for land to nonoperator landlords, because the smaller operations tend to own their land and often look to alternative sources of income rather than expansion of farming activities through renting land from others.

	Production of \$250,000 or more	Production of less than \$20,000
	Percent	
Number of farms	5.8	60.6
Factor payments	55.1	8.1
Employee compensation	74.8	3.5
Net rent received		
nonoperator landlords	49.5	3.1
Total of all output	38.5	18.7

**Negative numbers tell a story:** Four negative numbers appear in the size-class accounts presented in table 7, and each is quite logical when put in perspective. Net government transactions are negative for both the \$1,000,000-and-over group and \$20,000-and-less group, but the causes are different. (The negative indicates that they are paying more in taxes and fees to government entities than they receive in direct payments under government programs.) Congress imposes limitations on the amounts that individual farming operations may receive under Federal programs. Many of the largest operations produce livestock or fruit and vegetable crops not covered under Federal programs. The negative in net government transactions for the smaller group reflects the relatively high property taxes paid by small producers due to the disproportionate value of total assets com-

prised by both farm dwellings and motor vehicles. The impact is also seen in the size of the share of capital consumption and interest on real estate incurred by the smallest operations, as they generally have considerably more than would appear to be justified if the sole objective were to maximize profitability of the farm operation.

Both net value-added and net farm income are negative for the \$20,000-and-less group of farms, which again reflects the rural-living aspects of these small operations, where supplemental income from off-farm sources generally is greater than the income from farming activities. Typically the value of buildings, particularly dwellings, and motor vehicles far exceeds what would appear to be justifiable for the farming activities. The implication is that the operators may be consuming elements of the rural lifestyle that are not subject to market transactions and which are not included in the agricultural sector accounts.

	Production of \$1,000,000 or more	Production of less than \$20,000
	\$1,000	
Net government transactions	-274,960	-566,083
Net value-added	33,912,596	-3,844,273
Net farm income	23,113,300	-7,286,828

In summary, the disaggregation of the value-added accounts into size-class accounts provides significant new information about the U.S. farming sector and supplements the previously published size-class information for the cash income accounts. The size-class accounts significantly enhance the national accounts for the agricultural sector by allowing analysts to peer inside the sector to observe the status and differences among groups of farm operations. The value-added size-class accounts complement the cash-income size-class accounts by providing a different perspective of the exact same population of farms within each size group.

### ***The Methodology Underlying the Concept of Size-Class Accounting***

Disaggregation of the national value-added and income accounts provides additional perspectives on the U.S. agricultural sector, which can be invaluable when conducting an analysis of the sector and its participants. The size-class accounts are a case in point.

The disaggregation of the national accounts into size-classes results in a particularly useful set of statistics, which enable users to identify and assess trends and conditions related to structural and performance issues involving both farmers and the agricultural sector. Size-class accounting is an analytical method that enables the observation of the agricultural sector's farming activities in each of the several size

groups. In using annual data alone, this approach cannot be a tool for a time series analysis, but nevertheless, it does provide snapshots, with each revealing attributes of the participants within the groups at a point in time. Through analysis, one can link the attributes and establish changes occurring between the snapshots; thereby identifying trends evolving within and between groups over time. Conclusions can then be drawn about underlying causal factors and expected future trends.

However, in using the information, clients should understand how the data are developed so as to not make inappropriate applications nor draw erroneous conclusions in any analysis based on the data, which can easily occur if the objectives of the inquiry extends beyond the parameters for which the data have relevance. An explanation of the methods used in developing the size-class accounts is presented here for the benefit of clients who may wish to further their understanding of the data.

USDA size-class accounts are determined based on a well-defined set of criterion which are inclusive of all sales of crops, livestock, poultry, and livestock products; the value of product removed for all crops, livestock, and poultry produced under contract; sales of all miscellaneous agricultural products; all government agricultural payments; and landlords' share of government payments and crops within a given calendar year. The size-class definition employed here is consistent with that used by the Economic Research Service and the National Agricultural Statistics Service, including the survey design and the tabulation of results from the 1995 Farm Costs and Returns Survey (FCRS). As a point of interest, beginning with 1996, the FCRS was merged with another survey and the name changed to the Agricultural Resource and Management Survey (ARMS), thus references in this article to either survey should be viewed as one and the same.

In estimating size-class accounts for the U.S. agricultural sector, sufficient data are simply not available to enable a direct estimation of size-class accounts. Agricultural sector value added and income accounts are disaggregated into size class estimates using a set of causal or same variables from the Agricultural Resource and Management Survey. Survey data are used as a basis for determining size-class distributors of national accounts. In cases where official sector estimates represent a direct use of survey data, for instance, farm origin inputs, the value is used directly as the distributor. In other cases, for example, in distributing capital consumption, the value of all assets is used as a proxy to distribute the component account capital consumption based on size class. The value of all assets was chosen as the proxy for distributing the account because the objective is to get the best possible variable that would measure the replacement cost of a capital asset in the case of irreparable damage.

In the approach employed, the objective, in essence, is to develop size-class distributors using the best data available to disclose estimates of the shares of each line-item in the

sector value-added and income accounts attributable to farming operations within each size class. The shares, expressed as percentages, are placed in a matrix in which the rows correspond to the national value-added accounts table (see table 1). The columns represent the size-class breakouts into which the farm operations are partitioned. (Each row sums to 100 percent, representing a complete accounting of the sector estimate for each line item.) When appropriately positioned by row (account component) and column (size-class), the multiplication of each percent times the corresponding account value (row) in the national value-added estimates' table yields a value of that component measuring the contribution of that size class. Thus, the monetary contributions of farming operations within all size classes are displayed along with the total national estimate for each line item of the value-added accounts.

Again, where possible, the data series used to distribute a component item duplicates the component in definition, if not in value. When matches in definition are not available, data series used for distributing the value-added accounts are evaluated and selected for the most similarities in composition, for example, in the case of measuring electricity. For example, the all utility expense account was selected as the distributor by which to disaggregate the electricity component. In those situations where reliable data comporting to represent similar measurements are not available, alternative series are evaluated for correspondence in distributions by size of operation because they are affected by the same causal or decision variables.

As previously noted, the source of the data utilized as distributors is the Agricultural Resources Management Survey. The survey design for the ARMS produces much information that is consistent in definition with the components of the national value-added and farm income accounting model. As a general rule, ARMS information is not considered for use if the coefficient of variation (cv) exceeds 50 percent; and in cases where the cv exceeds 25 percent, it must be footnoted on the table publishing the value. In the example of the 1995 sales class table presented in this publication, only one statistic employed had a cv between 25 and 50, namely contract labor in the \$100,000 - \$249,999 size class. Statistics with a coefficient of variance above 50 must have the associated cv published with the data value from the survey. None of the statistics had cv's above 50. Some component items typically displayed in the value-added tables may be derived as the sum of subcomponents for which distributions are estimated but not published.

To illustrate the methods introduced above, the selection of data series employed to distribute individual components of the national value-added and farm income accounts by size class for 1995 are identified in the next section. An explanation of each data series in the set of distributors is included for the reader's edification. The matrix of distributors used in producing the 1995 value-added accounts (see table 8) are exhibited in table 9.



<u>Account Component</u>		<u>Distributor</u>
<b>Plus:</b>	<b>Final Crop Output</b>	Value of crop production - used on farm
<b>Plus:</b>	<b>Final Animal Output</b>	Value of livestock production
<b>Plus:</b>	<b>Services and Forestry</b>	Gross rental value of farm dwellings + income from machine hire and custom work + forest products + other farm related income + custom feed (Income from livestock grazing, income from livestock under production and marketing contracts)
<b>Equal:</b>	<b>Final Agricultural Sector Output</b>	
<b>Less:</b>	<b>Intermediate Consumption Outlays</b>	
	<b>Farm Origin</b>	
	Feed purchased	Feed purchases 1/
	Livestock and poultry purchased	Livestock and poultry purchases 1/
	Seed and plant purchased	Seed purchases 1/
	<b>Manufactured Inputs</b>	
	Fertilizer and lime	Fertilizer and lime expenses 1/
	Pesticides	Pesticide expenses 1/
	Petroleum fuel and oils	Petroleum fuel and oil expenses 1/
	Electricity	Utility expenses 1/
	<b>Other Intermediate Expenses</b>	
	Repair and maintenance	Repair and maintenance expenses, including operator dwellings 1/
	Machine hire and customwork	Machine hire and customwork expenses 1/
	Marketing, storage, and transportation	Marketing and storage expenses 1/ + transportation expenses 1/
	Contract labor	Contract labor expenses
	Miscellaneous expenses 1/	Livestock leasing and other livestock purchased + bedding and litter + veterinarian fees + Federal/State grazing fees + Other unallocated expenses + general business expenses + office equipment + supplies + insurance
<b>Plus:</b>	<b>Net Government Transactions</b>	
	+ Direct government payments	Government payments to operators and landlords
	- Motor vehicle registration/ licensing fees	Value of motor vehicles
	- Property taxes	Real estate and property taxes, including operator dwellings
<b>Equal:</b>	<b>Gross Value-added</b>	
<b>Less:</b>	<b>Capital Consumption</b>	Value of all assets ( value of hired labor and tenant houses + all other houses + all other farm buildings + value of trucks, tractors, autos, and other farm equipment + value of operator dwellings)
<b>Equal:</b>	<b>Net Value-added</b>	
<b>Less:</b>	<b>Factor Payments</b>	
	Employee compensation	Hired labor expenses and labor fringe benefits
	Net rent received by nonoperator landlords	Cash rent + landlords' share of production (including government payments) - (total reimbursed landlord operating expenses-landlords share of new fences, buildings completed or remodeled and remodeling or new construction of the operator's house)
	Real estate and nonreal estate interest	Real estate and nonreal estate interest, including operator dwellings
<b>Equal:</b>	<b>Net Farm Income</b>	

1/ Expense account includes contractor and landlord expenses.

Source: 1995 Farm Cost and Return Survey now termed the Agricultural Resource Management Survey.

Table 7--United States: Number of farms, net value-added and net farm income by value of size class, 1996

		\$1,000,000 or more	\$500,000 - \$999,999	\$250,000 - \$499,999	\$100,000 - \$249,999	\$50,000 - \$99,999	\$20,000 - \$49,999	Less than \$20,000	Total US
		Number							
Number of farms		18,080	31,454	78,429	208,455	201,107	269,464	1,256,921	2,063,910
		Thousand \$							
Plus:	Final crop output	27,589,156	16,287,875	20,375,452	26,751,436	11,473,820	6,911,762	4,122,766	113,512,267
Plus:	Final animal output	34,725,321	10,358,740	11,851,303	18,831,314	7,826,072	4,414,236	3,956,259	91,963,245
Plus:	Services and forestry	2,535,249	1,793,088	2,170,701	3,487,056	2,073,239	1,898,223	6,778,981	20,736,536
=	Final agricultural sector output	64,849,727	28,439,703	34,397,456	49,069,806	21,373,131	13,224,220	14,858,005	226,212,048
Less:	Intermediate consumption outlays	29,589,244	13,069,075	16,605,260	24,500,838	10,566,202	7,503,348	10,553,211	112,387,179
	Farm origin	15,035,493	5,669,480	5,679,532	8,211,088	2,992,436	2,001,297	2,905,357	42,494,681
	Manufactured inputs	4,279,552	3,517,674	5,162,901	7,427,904	3,215,116	2,271,408	2,518,707	28,393,261
	Other intermediate expenses	10,274,199	3,881,922	5,762,827	8,861,847	4,358,651	3,230,644	5,129,148	41,499,237
Plus:	Net government transactions	(274,960)	129,311	339,297	533,524	(125,292)	(6,270)	(566,083)	29,527
=	Gross value added	34,985,522	15,499,940	18,131,493	25,102,491	10,681,636	5,714,602	3,738,711	113,854,396
Less:	Capital consumption	1,072,926	1,062,515	1,668,828	3,154,229	2,089,632	2,298,425	7,582,984	13,929,540
=	Net value added	33,912,596	14,437,425	16,462,664	21,948,262	8,592,004	3,416,177	(3,844,273)	94,924,856
Less:	Factor payments	10,799,296	5,284,771	7,470,959	9,383,171	4,106,829	2,242,912	3,442,555	42,730,493
	Employee compensation	6,991,628	2,097,488	2,297,162	2,030,372	859,115	414,110	529,166	15,219,042
	Net rent received by nonoperator landlords	1,680,443	1,954,013	3,445,501	4,350,256	1,646,711	770,542	445,660	14,293,127
	Real estate and non real estate interest	2,127,225	1,233,270	1,728,296	3,002,542	1,601,003	1,058,259	2,467,729	13,218,324
=	Net farm income	23,113,300	9,152,654	8,991,705	12,565,091	4,485,175	1,173,266	(7,286,828)	52,194,363

Table 8--United States: Number of farms, net value-added and net farm income by value of size class, 1995

		\$1,000,000 or more	\$500,000 - \$999,999	\$250,000 - \$499,999	\$100,000 - \$249,999	\$50,000 - \$99,999	\$20,000 - \$49,999	Less than \$20,000	Total US
		Number							
Number of farms		17,380	30,265	72,503	213,367	206,261	276,403	1,255,341	2,071,520
		Thousand \$							
Plus:	Final crop output	23,492,096	13,869,084	17,349,645	22,778,779	9,769,928	5,885,347	3,510,524	96,655,403
Plus:	Final animal output	33,084,270	9,869,206	11,291,234	17,941,382	7,456,227	4,205,628	3,769,294	87,617,240
Plus:	Services and forestry	2,368,752	1,675,331	2,028,145	3,258,052	1,937,084	1,773,561	6,333,787	19,374,713
=	Final agricultural sector output	58,945,118	25,413,621	30,669,023	43,978,213	19,163,239	11,864,536	13,613,605	203,647,356
Less:	Intermediate consumption outlays	29,032,416	12,638,245	16,003,995	23,656,307	10,202,395	7,240,696	10,237,047	109,011,103
	Farm origin	14,817,748	5,537,448	5,511,255	8,022,903	2,918,278	1,950,916	2,869,385	41,627,934
	Manufactured inputs	3,940,485	3,236,906	4,750,848	6,842,327	2,966,857	2,099,444	2,338,325	26,175,192
	Other intermediate expenses	10,274,182	3,863,891	5,741,892	8,791,077	4,317,260	3,190,337	5,029,338	41,207,977
Plus:	Net government transactions	(270,250)	131,916	344,549	540,340	(118,852)	(1,280)	(551,956)	74,466
=	Gross value added	29,642,452	12,907,292	15,009,577	20,862,245	8,841,992	4,622,560	2,824,602	94,710,719
Less:	Capital consumption	1,072,061	1,061,658	1,667,482	3,151,685	2,087,947	2,296,571	7,576,869	18,914,273
=	Net value added	28,570,391	11,845,634	13,342,094	17,710,560	6,754,045	2,325,989	(4,752,267)	75,796,446
Less:	Factor payments	10,047,912	4,802,971	6,718,332	8,452,242	3,731,967	2,055,305	3,248,383	39,057,112
	Employee compensation	6,590,901	1,977,270	2,165,500	1,914,001	809,874	390,375	498,837	14,346,758
	Net rent received by nonoperator landlords	1,408,958	1,638,331	2,888,860	3,647,447	1,380,675	646,057	373,661	11,983,988
	Real estate and non real estate interest	2,048,054	1,187,370	1,663,972	2,890,794	1,541,417	1,018,873	2,375,885	12,726,365
=	Net farm income	18,522,479	7,042,663	6,623,762	9,258,318	3,022,078	270,684	(8,000,650)	36,739,334



Table 9--United States: Share factors used to distribute national estimates for number of farms, net value-added and net farm income by value of size class, 1995

Item	Size Classes							National total
	\$1,000,000 or more	\$500,000 - \$999,999	\$250,000 - \$499,999	\$100,000 - \$249,999	\$50,000 - \$99,999	\$20,000 - \$49,999	Less than \$20,000	
	Percent							
Number of farms	0.8	1.5	3.5	10.3	10.0	13.3	60.6	100.0
Plus Final crop output	24.3	14.3	18.0	23.6	10.1	6.1	3.6	100.0
Plus Final animal output	37.8	11.3	12.9	20.5	8.5	4.8	4.3	100.0
Plus Services and forestry	12.2	8.6	10.5	16.8	10.0	9.2	32.7	100.0
Equal: Final agricultural sector output								
Less: Intermediate consumption outlays								
Farm origin								
Feed purchased	39.2	13.6	13.3	17.0	6.2	4.0	6.7	100.0
Livestock and poultry purchased	37.1	12.5	11.2	19.7	6.9	4.7	7.9	100.0
Seed purchased	16.6	13.6	17.7	28.2	10.7	7.7	5.4	100.0
Manufactured inputs								
Fertilizers and lime	12.2	12.7	19.5	27.4	11.8	7.9	8.4	100.0
Pesticides	17.8	14.2	20.2	27.4	10.3	6.2	3.9	100.0
Petroleum fuel and oils	12.6	10.6	15.3	24.9	12.6	9.7	14.3	100.0
Electricity	22.2	9.8	13.4	20.7	10.1	10.0	13.8	100.0
Other intermediate expenses								
Repair and maintenance of capital items	13.8	9.4	14.3	23.0	12.1	9.4	17.9	100.0
Machine hire and customwork	22.8	10.9	14.5	24.3	10.8	7.3	9.3	100.0
Marketing, storage, and transportation expenses	30.1	10.7	18.0 *	21.5	9.1	5.6	5.0	100.0
Contract labor	51.2	6.2	7.2	17.9	6.1	5.3	6.0	100.0
Miscellaneous expenses	26.4	8.7	12.7	19.9	10.6	8.1	13.5	100.0
Plus Net government transactions								
+ Direct Government payments	3.9	9.5	18.9	29.2	11.6	11.1	15.9	100.0
- Motor vehicle registration and licensing fees	7.6	8.5	13.6	23.7	13.6	11.5	21.5	100.0
- Property taxes	7.7	7.7	14.4	21.8	13.3	11.2	23.9	100.0
Gross value added								
Less: Capital consumption	5.7	5.6	8.8	16.7	11.0	12.1	40.1	100.0
Equal: Net value added								
Less: Factor payments								
Employee compensation	45.9	13.8	15.1	13.3	5.6	2.7	3.5	100.0
Net rent received by nonoperator landlords	11.8	13.7	24.1	30.4	11.5	5.4	3.1	100.0
Real estate and non real estate interest	16.1	9.3	13.1	22.7	12.1	8.0	18.7	100.0
Equal: Net farm income								

\* = CV is between 25 and 50.

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Appendix table 1--Farm income statements, 1992-97F

	1992	1993	1994	1995	1996	1997F
Billion dollars						
Cash income:						
1. Cash receipts	171.4	177.7	181.2	187.7	202.3	199.5
Crops 1/	85.7	87.5	93.1	100.7	109.4	105.6
Livestock	85.6	90.2	88.2	87.0	92.9	93.9
2. Direct government payments	9.2	13.4	7.9	7.3	7.3	7.6
3. Farm-related income 2/	8.2	9.0	9.2	10.1	11.0	11.0
4. Gross cash income (1+2+3)	188.7	200.1	198.3	205.0	220.6	218.1
5. Cash expenses 3/	133.6	141.2	147.6	153.9	160.6	163.4
6. NET CASH INCOME (4-5)	55.1	58.8	50.7	51.2	59.9	54.7
Farm income:						
7. Gross cash income (1+2+3)	188.7	200.1	198.3	205.0	220.6	218.1
8. Nonmoney income 4/	7.6	8.1	9.2	9.8	10.2	10.9
9. Inventory adjustment	4.2	-4.5	8.2	-3.9	2.7	1.0
10. Total gross income (7+8+9)	200.5	203.6	215.7	210.9	233.5	230.0
11. Total expenses	152.9	160.5	167.5	174.2	181.3	184.0
12. NET FARM INCOME (10-11)	47.5	43.1	48.3	36.7	52.2	45.9

F = forecast. Totals may not add due to rounding.

1/ Includes payments received from CCC for placements of crops under nonrecourse loans.

2/ Income from machine hire and customwork, forest product sales, custom feeding service fees, and other farm sources.

3/ Excludes expenses for onfarm operator dwellings and noncash items such as capital consumption and perquisites to hired labor

4/ Includes the value of home consumption of farm products plus imputed rental value of operator dwellings.



Appendix table 2--Deriving farm operator household income estimates from the Farm Costs and Returns Survey (FCRS) that are consistent with Current Population Survey (CPS) methodology, 1992-97 1/

	1992	1993	1994	1995	1996	1997F
Dollars per farm						
Net cash farm business income 2/	11,320	11,248	11,389	11,218	n.a.	n.a.
Less depreciation 3/	5,187	6,219	6,466	6,795	n.a.	n.a.
Less wages paid to operator 4/	216	454	425	522	n.a.	n.a.
Less farmland rental income 5/	360	534	701	769	n.a.	n.a.
Less adjusted farm business income due to other household(s) 6/	961	872	815	649	n.a.	n.a.
Dollars per farm operator household						
Equals adjusted farm business income	4,596	3,168	2,981	2,484	n.a.	n.a.
Plus wages paid to operator	216	454	425	522	n.a.	n.a.
Plus net income from farmland rental 7/	360	n.a.	n.a.	1,053	n.a.	n.a.
Equals farm self-employment income	5,172	3,623	3,407	4,059	n.a.	n.a.
Plus other farm-related earnings 8/	2,008	1,192	970	661	n.a.	n.a.
Equals earnings of the operator household from farming activities	7,180	4,815	4,376	4,720	5,881	5,102
Plus earnings of the operator household from off-farm sources 9/	35,731	35,408	38,092	39,671	40,893	42,292
Equals average farm operator household income comparable with U.S. average household income, as measured by the CPS	42,911	40,223	42,469	44,392	46,774	47,394
Dollars per U.S. household						
U.S. average household income 10/	38,840	41,428	43,133	44,938	n.a.	n.a.
Percent						
Average farm operator household income as percent of U.S. average household income	110.5	97.1	98.5	98.8	n.a.	n.a.
Average operator household earnings from farming activities as percent of average operator household income	16.7	12.0	10.3	10.6	n.a.	n.a.

F = forecast. n.a. = not available.

1/ The Current Population Survey (CPS), conducted by the Census Bureau, is the source of official U.S. household income statistics. The CPS defines income to include any income received as cash. In-kind receipts are excluded. The CPS definition departs from a strictly cash concept by including depreciation in the list of operating expenses that farm operators and other self-employed people subtract from gross receipts when they report net money income.

2/ A component of farm sector income. Excludes income of contractors and landlords as well as the income of farms organized as nonfamily corporations or cooperatives and farms run by a hired manager. Includes the income of farms organized as proprietorships, partnerships, and family corporations, which are all closely held by households.

3/ Consistent with the CPS definition of self-employment income, reported depreciation expenses are subtracted from net cash farm income. The Farm Costs and Returns Survey collects farm business depreciation used for tax purposes.

4/ Wages paid to the operator are subtracted here because they are not shared among other households that have claims on farm business income. These wages are added to the operator household's adjusted farm business income to obtain farm self-employment income.

5/ Gross rental income is subtracted here because net rental income from the farm operation is added below to income received by the household.

6/ More than one household per farm may have a claim on the income of a farm business. The national average is 1.1 households per farm sharing the income of a farm business.

7/ Includes net rental income from the farm business. Also includes net rental income from farmland held by household members that is not part of the farm business. In 1992 gross rental income from the farm business was used because net rental data were not collected. In 1993 and 1994, net rental income was collected as a part of off-farm income.

8/ Includes wages paid to other operator household members by the farm business and earnings (net income) from a farm business other than the one being surveyed.

9/ Income from wages, salaries, nonfarm businesses, interest, dividends, transfer payments, net rental income from nonfarm properties, etc. In 1993 and 1994, also includes net rental income from farmland.

10/ From the Current Population Survey.

Sources: U.S. Dept. of Agriculture, Economic Research Service, 1992, 1993, 1994, and 1995 Farm Costs and Returns Survey for farm operator household data. U.S. Dept. of Commerce, Bureau of the Census, Current Population Survey for U.S. average household income.

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Appendix table 3--Relationship of net cash to net farm income, 1992-97F

	1992	1993	1994	1995	1996	1997F
Billion dollars						
Gross cash income	188.7	200.1	198.3	205.0	220.6	218.1
Minus cash expenses	133.6	141.2	147.6	153.9	160.6	163.4
Equals net cash income	55.1	58.8	50.7	51.2	59.9	54.7
Plus nonmoney income 1/	7.6	8.1	9.2	9.8	10.2	10.9
Plus value of inventory change	4.2	-4.5	8.2	-3.9	2.7	1.0
Minus noncash expenses	15.2	15.2	15.4	15.5	15.4	15.5
Labor perquisites	0.5	0.4	0.4	0.6	0.6	0.6
Net capital consumption	14.7	14.8	14.9	14.9	14.8	14.9
Capital consumption exc. dwellings	16.1	16.2	16.3	16.3	16.2	16.3
- Landlord capital consumption	1.4	1.4	1.4	1.4	1.4	1.4
Minus operator dwelling expenses	4.1	4.0	4.5	4.8	5.2	5.2
Capital consumption	2.2	2.2	2.4	2.6	2.7	2.8
Interest	0.4	0.3	0.4	0.4	0.4	0.5
Property taxes	0.6	0.7	0.8	0.8	0.9	0.9
Repair and maintenance	0.6	0.5	0.5	0.5	0.8	0.5
Insurance	0.3	0.3	0.4	0.4	0.4	0.4
Equals net farm income	47.5	43.1	48.3	36.7	52.2	45.9

F = forecast.

1/ The value of home consumption and gross rental value of all dwellings.



Appendix table 4--Cash receipts, 1992-97F

	1992	1993	1994	1995	1996	1997F
	Billion dollars					
Crop receipts 1/	85.7	87.5	93.1	100.7	109.4	105.6
Food grains	8.5	8.2	9.5	10.4	11.5	10.3
Wheat	7.2	7.5	7.9	9.1	10.0	8.6
Rice	1.3	0.7	1.7	1.3	1.6	1.7
Feed grains and hay	20.1	20.2	20.4	24.3	28.1	25.8
Corn	14.7	14.6	14.7	18.6	21.6	18.8
Sorghum, barley, and oats	2.3	2.0	2.0	2.3	3.0	2.5
Oil crops	13.3	13.2	14.7	15.5	17.8	18.9
Soybeans	11.6	11.8	12.8	13.9	16.2	17.3
Peanuts	1.3	1.0	1.2	1.0	1.0	1.1
Cotton lint and seed	5.2	5.2	6.7	6.9	7.5	6.7
Tobacco	3.0	2.9	2.7	2.5	2.8	2.9
Fruits and nuts	10.2	10.3	10.3	11.1	11.7	10.8
Vegetables	11.9	13.4	13.9	14.9	14.3	13.9
Greenhouse & nursery	9.3	9.6	10.0	10.4	10.9	11.5
Livestock receipts 2/	85.6	90.2	88.2	87.0	92.9	93.9
Red meats	47.7	50.8	46.8	44.8	44.4	47.5
Cattle and calves	37.3	39.4	36.4	34.0	31.1	33.9
Hogs	10.0	10.9	9.9	10.3	12.6	13.0
Sheep and lambs	0.5	0.6	0.5	0.6	0.6	0.6
Poultry and eggs	15.5	17.3	18.4	19.1	22.3	22.4
Broilers	9.2	10.4	11.4	11.8	13.9	14.4
Turkeys	2.4	2.5	2.6	2.8	3.1	3.1
Eggs	3.4	3.8	3.8	3.9	4.8	4.4
Dairy products	19.7	19.2	19.9	19.9	22.8	20.7
<b>TOTAL RECEIPTS</b>	<b>171.4</b>	<b>177.7</b>	<b>181.2</b>	<b>187.7</b>	<b>202.3</b>	<b>199.5</b>

F = forecast. Totals may not add due to rounding.

1/ Includes sugar, seed, and other miscellaneous crops.

2/ Includes miscellaneous livestock and livestock products.

Appendix table 5--Farm production expenses, 1992-97F

	1992	1993	1994	1995	1996	1997F
Billion dollars						
Farm origin	38.6	41.2	41.3	41.6	42.5	43.4
Feed purchased	20.1	21.4	22.6	23.8	25.2	23.7
Livestock and poultry purchased	13.6	14.6	13.3	12.3	11.1	13.4
Seed purchased	4.9	5.2	5.4	5.5	6.1	6.3
Manufactured inputs	22.7	23.1	24.4	26.2	28.4	28.3
Fertilizer and lime	8.3	8.4	9.2	10.0	10.9	10.8
Pesticides	6.5	6.7	7.2	7.7	8.5	8.7
Petroleum fuel and oils	5.3	5.3	5.3	5.4	5.7	5.7
Electricity	2.6	2.7	2.7	3.0	3.2	3.2
Interest	11.1	10.8	11.7	12.7	13.2	13.4
Nonreal estate	5.4	5.3	6.0	6.7	6.9	7.0
Real estate	5.7	5.5	5.8	6.0	6.4	6.4
Other operating expenses	47.3	52.4	53.1	56.1	57.1	59.1
Repair and maintenance	8.5	9.2	9.1	9.5	10.3	10.7
Machine hire and customwork	3.8	4.4	4.8	4.8	4.7	4.9
Marketing, storage, & transportation	4.5	5.6	6.8	7.2	6.8	7.2
Labor	14.0	15.0	15.3	16.3	17.3	18.3
Miscellaneous	16.5	18.2	17.1	18.3	18.0	18.1
Other overhead expenses	35.6	35.6	36.9	37.6	40.1	39.9
Capital consumption	18.3	18.4	18.7	18.9	18.9	19.0
Property taxes	6.1	6.2	6.5	6.7	6.8	7.0
Net rent to nonoperator landlords	11.2	11.0	11.7	12.0	14.3	13.9
Total production expenses	152.9	160.5	167.5	174.2	181.3	184.0
Noncash expenses	15.2	15.2	15.4	15.5	15.4	15.5
Labor perquisites	0.5	0.4	0.4	0.6	0.6	0.6
Net capital consumption	14.7	14.8	14.9	14.9	14.8	14.9
Capital consumption exc. dwellings	16.1	16.2	16.3	16.3	16.2	16.3
- Landlord capital consumption	1.4	1.4	1.4	1.4	1.4	1.4
Operator dwelling expenses	4.1	4.1	4.5	4.8	5.2	5.2
Capital consumption	2.2	2.2	2.4	2.6	2.7	2.8
Interest	0.4	0.4	0.4	0.4	0.4	0.5
Property taxes	0.6	0.7	0.8	0.8	0.9	0.9
Repair and maintenance	0.6	0.5	0.5	0.5	0.8	0.5
Insurance	0.3	0.3	0.4	0.4	0.4	0.4
Cash expenses 1/	133.6	141.2	147.6	153.9	160.6	163.4

F = forecast.

1/ Total production expenses minus noncash and onfarm operator dwelling expenses.



Appendix table 6--Farm business balance sheet, 1992-97F

	1992	1993	1994	1995	1996	1997F
Billion dollars						
Farm assets	868.9	904.6	938.1	978.0	1,038.3	1,085.0
Real estate	642.8	673.4	706.9	755.7	811.0	855.0
Livestock and poultry	71.0	72.8	67.9	58.1	60.0	59.0
Machinery and motor vehicles	85.5	86.7	87.9	86.9	89.0	90.0
Crops stored 1/	22.7	20.4	22.5	25.1	26.8	28.0
Purchased inputs	3.9	4.2	5.0	3.4	4.5	5.0
Financial assets	43.1	46.6	47.8	48.8	47.0	48.0
Farm debt	139.0	141.9	146.8	150.8	156.1	161.0
Real estate 2/	75.4	76.0	77.7	79.3	81.8	83.0
Nonreal estate	63.6	65.9	69.1	71.5	74.4	77.0
Farm equity	729.9	762.6	791.3	827.2	882.3	923.0

F = forecast

1/ Non-CCC crops held on farm, plus value above loan rate for crops held under CCC.

2/ Includes CCC storage and drying facility loans.

Appendix table 7--Farm sector rates of return, 1992-97F

	1992	1993	1994	1995	1996	1997F
Percent						
Rate of return on assets	4.1	3.0	3.7	1.7	4.2	3.5
Real capital gains on assets	-0.1	2.3	1.3	3.5	1.7	1.7
Total real return on assets 1/	4.0	5.3	5.0	5.2	5.9	5.2
Average interest rate paid on debt	7.8	7.4	7.9	8.3	8.2	8.0
Real capital gains on debt	3.1	2.3	2.4	2.0	3.5	3.7
Real cost of debt 2/	4.7	5.2	5.5	6.3	4.7	4.3
Rate of return on equity	3.4	2.2	4.9	0.5	3.4	2.6
Real capital gains on equity	1.0	5.1	1.9	4.5	2.4	2.4
Total real return on equity 3/	4.4	5.4	4.8	5.0	5.9	5.1
Real net return on assets financed by debt 4/	-0.4	0.2	-0.5	-1.1	1.2	0.9

F = forecast. Numbers may not add due to rounding.

1/ Rate of return on assets from current income, plus rate of return from real capital gains.

2/ Average interest rate paid on farm debt minus real capital gains on debt.

3/ Rate of return on equity plus rate of return from real capital gains.

4/ Total real return on farm assets minus the real cost of debt. When the total real rate of return on assets exceeds the total real cost of farm debt, debt financing is advantageous.

Appendix table 8--Farm financial measures: 1992-97F

Ratios	1992	1993	1994	1995	1996	1997F
	Ratio					
Liquidity ratios:						
Farm business debt service coverage 1/	2.42	2.55	2.16	2.01	2.26	2.1
Debt servicing 2/	0.14	0.14	0.14	0.15	0.14	0.14
Times interest earned ratio 3/	5.84	5.59	5.66	4.24	5.40	4.9
Solvency ratios:						
Debt/asset 4/	16.0	15.7	15.6	15.4	15.0	14.9
Debt/equity 5/	19.1	18.6	18.6	18.2	17.7	17.5
Profitability ratios:						
Return on equity 6/	3.4	2.2	2.9	0.5	3.4	2.6
Return on assets 7/	4.1	3.0	3.7	1.7	4.2	3.5
Financial efficiency ratios:						
Gross ratio 8/	70.7	70.6	74.5	76.2	73.8	75.3
Interest to gross cash farm income 9/	5.7	5.2	5.8	6.1	5.8	5.9
Asset turnover 10/	22.0	22.6	21.5	21.2	21.9	20.8
Debt burden ratio (net cash income plus interest/farm debt) 11/	47.5	49.3	42.8	49.3	46.0	42.4

F = forecast.

1/ Assesses the ability of farm businesses to repay interest and principal associated with farm business debt from net cash farm income. Higher values indicate a better cash position.

2/ Indicates the proportion of gross cash farm income needed to service debt. Lower values indicate a relatively better cash position.

3/ Focuses on the ability to meet interest payments out of net farm income. A higher value of the times interest-earned ratio indicates that net farm income covers more interest expense and that operator equity is less exposed to risk.

4/ Indicates the relative dependence of farm businesses on debt and their ability to use additional credit without impairing their risk-bearing ability.

5/ Measures the relative proportion of funds provided by creditors (debt) and owners (equity).

6/ Measures the per-dollar returns to equity capital employed in the farm business from current income.

7/ Measures the per-dollar returns to farm assets from current income.

8/ Gives the proportion of gross cash income absorbed by cash production expenses. The higher the value of the ratio, the less efficient the farm sector is considered to be.

9/ Gives the proportion of gross farm revenue absorbed by interest payments. Higher values indicate a relatively fixed expense structure and less flexibility in meeting expenses as they arise.

10/ Measures the gross cash farm income generated per dollar of farm assets. The higher the value of the ratio relative to similar-sized operations, the more efficiently the farm business uses its assets.

11/ The debt-burden ratio reflects the strain placed on farm earnings to meet farm debt repayment obligations.



Appendix table 9-- Farm marketings, 1995 and 1996, government payments, 1996 and principal commodities, 1996, by State

State	Farm marketings, 1995			Farm marketings, 1996			1996	1996
	Total	Crops	Livestock and products	Total	Crops	Livestock and products	Government payments	State rank for total farm marketings, four principal commodities in order of marketing receipts, and percentage of total marketings
1,000 dollars								
AL	2,871,842	705,248	2,166,594	3,173,595	810,637	2,362,958	75,550	26-Broilers, cattle/calves, cotton, chicken eggs(76%)
AK	29,702	23,882	5,820	29,418	23,310	6,108	1,258	50-Greenhouse, dairy, potatoes, hay(80%)
AZ	2,156,991	1,346,765	810,226	2,146,417	1,307,590	838,827	57,993	32-Cattle/calves, dairy, cotton, lettuce(65%)
AR	5,089,646	2,068,078	3,021,568	5,886,786	2,530,163	3,356,623	361,818	11-Broilers, soybeans, rice, cotton(71%)
CA	22,522,620	16,973,326	5,549,294	23,309,526	17,096,190	6,213,336	295,460	1-Dairy, greenhouse, grapes, cotton(40%)
CO	4,156,420	1,413,850	2,742,570	4,229,447	1,470,312	2,759,135	176,101	17-Cattle/calves, wheat, corn, dairy(72%)
CT	458,159	230,463	227,696	489,113	252,413	236,700	1,791	42-Greenhouse, dairy, aquaculture, chicken eggs(66%)
DE	678,633	161,680	516,953	757,036	183,580	573,456	4,888	39-Broilers, soybeans, corn, greenhouse(83%)
FL	5,955,589	4,817,830	1,137,759	6,130,658	4,942,465	1,188,193	22,872	9-Oranges, greenhouse, sugar, dairy(54%)
GA	5,136,236	2,347,642	2,788,594	5,687,046	2,407,786	3,279,260	114,524	12-Broilers, cotton, peanuts, chicken eggs(65%)
HI	494,465	422,604	71,861	482,589	416,594	65,995	580	44-Sugar, pineapples, greenhouse, macadamia nuts(65%)
ID	3,153,399	1,932,115	1,221,284	3,409,945	2,080,687	1,329,258	116,009	25-Potatoes, dairy, cattle/calves, wheat(71%)
IL	8,462,436	6,536,501	1,925,935	9,049,998	6,988,895	2,061,103	386,767	5-Corn, soybeans, hogs, cattle/calves(88%)
IN	5,187,002	3,428,298	1,758,704	5,558,099	3,663,444	1,894,655	213,703	14-Corn, soybeans, hogs, chicken eggs(79%)
IA	11,256,486	6,234,219	5,022,267	12,852,687	7,395,907	5,456,780	501,694	3-Corn, hogs, soybeans, cattle/calves(91%)
KS	7,571,861	3,035,489	4,536,372	7,869,209	3,298,882	4,570,327	555,139	7-Cattle/calves, wheat, corn, sorghum grain(84%)
KY	3,100,485	1,484,991	1,615,494	3,550,232	1,831,347	1,718,885	74,542	22-Tobacco, horses/mules, cattle/calves, corn(64%)
LA	2,013,292	1,383,447	629,845	2,342,068	1,654,858	687,210	176,471	31-Cotton, sugar, soybeans, rice(55%)
ME	450,292	200,717	249,575	485,111	223,574	261,537	4,638	43-Potatoes, dairy, chicken eggs, aquaculture(70%)
MD	1,405,155	571,591	833,564	1,533,770	633,267	900,503	17,647	36-Broilers, greenhouse, dairy, corn(68%)
MA	435,618	336,144	99,474	477,698	368,631	109,067	1,548	45-Greenhouse, cranberries, dairy, apples(69%)
MI	3,626,110	2,282,633	1,343,477	3,642,927	2,194,946	1,447,981	109,585	20-Dairy, corn, greenhouse, soybeans(57%)
MN	7,129,443	3,681,200	3,448,243	8,808,931	4,640,508	4,168,423	348,804	6-Corn, soybeans, dairy, hogs(66%)
MS	3,134,266	1,448,499	1,685,767	3,462,784	1,528,505	1,934,279	184,925	24-Broilers, cotton, soybeans, aquaculture(73%)
MO	4,372,362	2,087,332	2,285,030	4,950,421	2,500,276	2,450,145	289,279	16-soybeans, corn, hogs, cattle/calves(59%)
MT	1,870,128	1,073,877	796,251	2,027,226	1,230,299	796,927	240,874	33-Wheat, cattle/calves, barley, hay(87%)
NE	8,953,100	3,762,580	5,190,520	9,454,041	4,176,780	5,277,261	388,819	4-Cattle/calves, corn, hogs, soybeans(87%)
NV	282,081	118,496	163,585	286,002	132,566	153,436	2,605	47-Cattle/calves, hay, dairy, potatoes(81%)
NH	149,372	85,991	63,381	160,907	88,605	72,302	1,093	48-Dairy, greenhouse, apples, cattle/calves(65%)
NJ	773,216	577,044	196,172	800,958	605,395	195,563	3,258	38-Greenhouse, dairy, peaches, blueberries(46%)
NM	1,458,230	497,634	960,596	1,709,056	511,567	1,197,489	59,000	34-Cattle/calves, dairy, hay, chili peppers(80%)
NY	2,858,839	1,006,401	1,852,438	3,043,034	998,487	2,044,547	43,289	27-Dairy, greenhouse, apples, corn(72%)
NC	6,890,590	3,164,560	3,726,030	7,831,309	3,403,986	4,427,323	75,702	8-Hogs, broilers, tobacco, greenhouse(63%)
ND	3,141,141	2,573,899	567,242	3,532,393	2,995,616	536,777	351,520	23-Wheat, cattle/calves, barley, sunflower(69%)
OH	4,683,502	3,094,046	1,589,456	5,121,783	3,176,785	1,944,998	163,120	15-soybeans, corn, dairy, greenhouse(63%)
OK	3,663,270	1,091,284	2,571,986	3,565,551	1,126,250	2,439,301	236,707	21-Cattle/calves, wheat, broilers, hogs(70%)
OR	2,708,574	2,048,601	659,973	2,976,542	2,320,012	656,530	74,262	28-Greenhouse, wheat, cattle/calves, dairy(41%)
PA	3,769,120	1,215,866	2,553,254	4,142,509	1,277,932	2,864,577	37,111	18-Dairy, cattle/calves, greenhouse, chicken eggs(63%)
RI	79,243	70,087	9,156	82,867	71,573	11,294	156	49-Greenhouse, dairy, chicken eggs, sweet corn(72%)
SC	1,429,652	816,180	613,472	1,602,056	864,846	737,210	42,868	35-Broilers, tobacco, greenhouse, cotton(53%)
SD	3,396,482	1,696,481	1,700,001	3,683,512	2,050,747	1,632,765	229,605	19-Cattle/calves, corn, soybeans, wheat(72%)
TN	2,120,433	1,227,838	892,595	2,371,873	1,374,213	997,660	79,917	30-Cattle/calves, cotton, soybeans, dairy(49%)
TX	13,108,475	4,657,691	8,450,784	13,053,234	5,295,205	7,758,029	764,778	2-Cattle/calves, cotton, dairy, greenhouse(68%)
UT	812,019	220,688	591,331	873,143	227,004	646,139	21,006	37-Cattle/calves, dairy, hay, wheat(66%)
VT	470,232	89,874	380,358	534,666	97,609	437,057	4,035	41-Dairy, cattle/calves, greenhouse, maple products(88%)
VA	2,230,400	837,549	1,392,851	2,378,146	900,163	1,477,983	30,423	29-Broilers, dairy, cattle/calves, turkeys(49%)
WA	5,214,525	3,631,104	1,583,421	5,680,980	4,016,590	1,664,390	156,039	13-Apples, dairy, wheat, cattle/calves(58%)
WV	390,940	78,959	311,981	388,170	79,979	308,191	4,538	46-Broilers, cattle/calves, dairy, turkeys(70%)
WI	5,673,705	1,724,736	3,948,969	6,061,542	1,773,464	4,288,078	156,849	10-Dairy, corn, cattle/calves, soybeans(78%)
WY	728,064	184,077	543,987	661,979	184,338	477,641	24,381	40-Cattle/calves, hay, sugarbeets, wheat(77%)
US	187,703,843	100,700,087	87,003,756	202,338,990	109,424,778	92,914,212	7,285,541	Cattle/calves, dairy prod, corn, soybeans(45%)

Appendix table 10--Net farm income by States, 1995-96

State	1995			1996		
	Final agricultural output 1/	Net value added 2/	Net farm income 3/	Final agricultural output 1/	Net value added 2/	Net farm income 3/
1,000 dollars						
ALABAMA	3,473,145	1,257,171	864,815	3,830,990	1,468,790	1,074,115
ALASKA	34,599	17,296	11,195	34,979	16,403	10,328
ARIZONA	2,286,039	1,046,825	660,758	2,314,156	1,109,107	721,619
ARKANSAS	5,475,021	2,213,712	1,484,023	6,534,153	2,905,554	2,101,176
CALIFORNIA	23,372,200	9,950,518	4,644,537	24,788,655	11,519,525	5,662,985
COLORADO	4,629,821	1,317,418	636,229	4,740,818	1,533,901	843,535
CONNECTICUT	508,603	246,340	140,309	520,389	265,126	153,730
DELAWARE	754,840	158,550	93,177	855,446	208,580	138,075
FLORIDA	6,199,945	3,024,901	1,812,895	6,437,358	3,035,656	1,769,062
GEORGIA	5,820,966	2,570,393	1,953,357	6,456,625	2,889,948	2,233,736
HAWAII	530,288	226,343	11,397	519,867	213,721	(2,004)
IDAHO	3,462,385	1,384,240	640,972	3,738,987	1,580,854	818,438
ILLINOIS	8,064,073	3,053,356	840,717	10,276,678	4,906,256	2,255,272
INDIANA	5,235,436	1,726,084	557,579	6,133,312	2,508,423	1,240,962
IOWA	11,433,395	4,693,620	2,186,104	13,968,613	6,790,737	3,969,022
KANSAS	8,017,177	2,298,035	1,052,198	8,903,233	3,126,794	1,728,549
KENTUCKY	3,594,143	1,463,942	813,293	3,988,678	1,754,572	1,045,863
LOUISIANA	2,224,814	975,417	520,608	2,551,972	1,198,667	700,944
MAINE	512,368	158,735	51,155	548,949	197,967	86,846
MARYLAND	1,588,895	417,497	192,528	1,819,608	614,876	372,622
MASSACHUSETTS	497,239	225,362	116,692	527,260	256,099	141,852
MICHIGAN	4,003,294	1,348,347	662,034	3,816,115	1,150,166	375,895
MINNESOTA	7,918,332	2,375,702	1,057,992	9,551,299	3,768,917	2,242,923
MISSISSIPPI	3,431,598	1,064,811	576,288	3,993,734	1,497,502	963,672
MISSOURI	4,721,174	1,188,013	305,668	5,921,713	2,239,699	1,194,572
MONTANA	2,250,814	970,161	413,165	2,192,128	900,070	334,898
NEBRASKA	9,266,456	3,359,386	1,801,545	10,860,155	4,865,490	3,075,464
NEVADA	338,006	108,752	47,585	359,701	117,039	56,109
NEW HAMPSHIRE	172,610	67,831	37,137	181,936	75,715	43,302
NEW JERSEY	902,527	410,498	226,938	935,675	451,450	260,597
NEW MEXICO	1,582,247	606,124	306,815	1,844,046	663,544	363,356
NEW YORK	3,100,628	831,720	272,823	3,311,896	1,054,965	462,487
NORTH CAROLINA	8,104,316	4,207,865	2,680,332	9,364,174	4,984,171	3,374,008
NORTH DAKOTA	3,254,731	1,301,270	340,525	4,098,963	2,073,132	964,049
OHIO	5,299,932	2,094,312	1,099,950	5,669,473	2,313,692	1,327,718
OKLAHOMA	4,029,043	1,053,179	487,894	4,061,294	1,144,173	551,396
OREGON	3,483,224	1,446,915	358,816	3,800,853	1,775,279	618,721
PENNSYLVANIA	4,165,241	1,106,685	529,750	4,636,412	1,559,152	945,911
RHODE ISLAND	89,102	54,013	40,564	92,332	51,124	36,979
SOUTH CAROLINA	1,576,890	591,416	366,399	1,807,576	735,153	492,747
SOUTH DAKOTA	3,432,137	1,418,392	654,502	4,344,837	2,268,576	1,331,947
TENNESSEE	2,638,164	941,372	470,459	2,647,531	878,780	386,142
TEXAS	14,790,399	4,900,672	2,524,270	14,341,735	5,012,805	2,573,495
UTAH	965,208	340,293	178,975	1,053,400	373,063	213,677
VERMONT	526,427	161,660	92,333	577,411	206,067	132,808
VIRGINIA	2,617,723	957,890	573,619	2,756,528	963,235	567,940
WASHINGTON	5,827,604	2,549,205	932,917	6,604,021	3,367,295	1,599,341
WEST VIRGINIA	480,865	102,919	41,123	471,542	73,482	10,332
WISCONSIN	6,079,514	1,528,768	284,067	6,564,536	2,003,708	560,396
WYOMING	883,757	282,519	90,311	860,303	255,855	66,755
UNITED STATES	203,647,356	75,796,446	36,739,334	226,212,048	94,924,856	52,194,363

1/ Total value of all commodities and services produced in the sector.

2/ Final sector output less intermediate consumption outlays, net government transactions, capital consumption

3/ Net value-added less payments to factors of production and is residual returns to operators.



Appendix table 11- State rankings for net farm income: total, per farming operation and per acre, 1996

Rank	Total		Per Operation		Per Acre	
	State	Value (\$1,000)	State	Value (\$1,000)	State	Value (Dollars)
1	CALIFORNIA	5,662,985	ARIZONA	96,216	RHODE ISLAND	587
2	IOWA	3,969,022	CALIFORNIA	69,061	CONNECTICUT	405
3	NORTH CAROLINA	3,374,008	NORTH CAROLINA	58,173	NORTH CAROLINA	367
4	NEBRASKA	3,075,464	DELAWARE	55,230	NEW JERSEY	310
5	TEXAS	2,573,495	NEBRASKA	54,919	MASSACHUSETTS	249
6	ILLINOIS	2,255,272	RHODE ISLAND	52,827	DELAWARE	244
7	MINNESOTA	2,242,923	GEORGIA	51,947	GEORGIA	189
8	GEORGIA	2,233,736	ARKANSAS	48,865	CALIFORNIA	189
9	ARKANSAS	2,101,176	WASHINGTON	44,426	MARYLAND	177
10	FLORIDA	1,769,062	FLORIDA	44,227	FLORIDA	172
11	KANSAS	1,728,549	SOUTH DAKOTA	40,983	ARKANSAS	140
12	WASHINGTON	1,599,341	IOWA	40,500	PENNSYLVANIA	123
13	SOUTH DAKOTA	1,331,947	CONNECTICUT	40,455	IOWA	120
14	OHIO	1,327,718	IDAHO	37,202	ALABAMA	110
15	INDIANA	1,240,962	COLORADO	34,430	WASHINGTON	102
16	MISSOURI	1,194,572	NORTH DAKOTA	31,098	NEW HAMPSHIRE	101
17	ALABAMA	1,074,115	ILLINOIS	29,675	SOUTH CAROLINA	99
18	KENTUCKY	1,045,863	NEW JERSEY	28,326	VERMONT	98
19	NORTH DAKOTA	964,049	MARYLAND	27,199	OHIO	88
20	MISSISSIPPI	963,672	NEW MEXICO	26,915	LOUISIANA	81
21	PENNSYLVANIA	945,911	KANSAS	26,190	ILLINOIS	80
22	COLORADO	843,535	LOUISIANA	25,961	INDIANA	78
23	IDAHO	818,438	MINNESOTA	25,781	MISSISSIPPI	76
24	ARIZONA	721,619	ALABAMA	23,869	MINNESOTA	75
25	LOUISIANA	700,944	MASSACHUSETTS	23,254	KENTUCKY	75
26	OREGON	618,721	SOUTH CAROLINA	22,918	VIRGINIA	66
27	VIRGINIA	567,940	NEVADA	22,444	NEBRASKA	65
28	WISCONSIN	560,396	VERMONT	22,135	MAINE	65
29	OKLAHOMA	551,396	MISSISSIPPI	21,902	IDAHO	61
30	SOUTH CAROLINA	492,747	INDIANA	20,344	NEW YORK	60
31	NEW YORK	462,487	ALASKA	20,250	MISSOURI	40
32	TENNESSEE	386,142	PENNSYLVANIA	18,918	KANSAS	36
33	MICHIGAN	375,895	OHIO	18,441	MICHIGAN	35
34	MARYLAND	372,622	NEW HAMPSHIRE	18,043	OREGON	35
35	NEW MEXICO	363,356	OREGON	16,071	WISCONSIN	33
36	MONTANA	334,898	UTAH	15,946	TENNESSEE	33
37	NEW JERSEY	260,597	MONTANA	15,223	SOUTH DAKOTA	30
38	UTAH	213,677	NEW YORK	12,847	COLORADO	26
39	CONNECTICUT	153,730	TEXAS	12,554	NORTH DAKOTA	24
40	MASSACHUSETTS	141,852	KENTUCKY	11,885	ARIZONA	20
41	DELAWARE	138,075	VIRGINIA	11,832	TEXAS	20
42	VERMONT	132,808	MAINE	11,736	UTAH	19
43	MAINE	86,846	MISSOURI	11,486	OKLAHOMA	16
44	WYOMING	66,755	OKLAHOMA	7,658	ALASKA	11
45	NEVADA	56,109	WYOMING	7,336	NEW MEXICO	8
46	NEW HAMPSHIRE	43,302	WISCONSIN	7,094	NEVADA	6
47	RHODE ISLAND	36,979	MICHIGAN	7,092	MONTANA	6
48	WEST VIRGINIA	10,332	TENNESSEE	4,827	WEST VIRGINIA	3
49	ALASKA	10,328	WEST VIRGINIA	517	WYOMING	2
50	HAWAII	(2,004)	HAWAII	(436)	HAWAII	(1)
	UNITED STATES	52,194,363	UNITED STATES	25,289	UNITED STATES	54

Appendix table 12a--U.S. feed grains production cash costs and returns, 1995-96

Item	Corn		Grain Sorghum		Oats		Barley	
	1995	1996	1995	1996	1995	1996	1995	1996
Dollars per planted acre								
Gross value of production (excluding direct government payments):								
Primary product	321.98	388.73	141.87	170.91	72.87	128.26	134.65	161.72
Secondary product (straw)	0.00	0.00	0.00	0.00	27.51	32.03	4.26	4.21
Total, gross value of production	321.98	388.73	141.87	170.91	100.38	160.29	138.91	165.93
Cash expenses:								
Seed	23.98	24.06	5.42	6.00	7.46	8.81	7.44	9.50
Fertilizer, lime, and gypsum	55.85	56.13	19.19	17.99	15.76	17.05	20.50	21.06
Chemicals	26.34	26.82	12.63	12.28	1.72	1.82	9.12	9.50
Custom operations 1/	9.65	9.76	5.07	5.26	4.30	4.33	4.88	4.70
Fuel, lube, and electricity	17.92	21.14	14.13	17.95	6.38	7.41	12.08	13.15
Repairs	15.91	17.00	15.65	16.95	10.31	9.63	13.80	15.79
Hired labor	8.03	8.37	4.99	5.42	1.76	1.93	4.99	5.24
Other variable cash expenses 2/	0.45	0.49	0.00	0.00	1.02	1.19	1.86	1.96
Total, variable cash expenses	158.13	163.77	77.08	81.85	48.71	52.17	74.67	80.90
General farm overhead	12.46	15.04	9.13	8.88	5.65	5.29	7.98	7.95
Taxes and insurance	20.01	22.7	9.13	9.27	13.88	14.85	13.20	14.27
Interest	16.73	21.14	9.30	9.61	5.57	5.49	12.79	13.38
Total, fixed cash expenses	49.20	58.88	27.56	27.76	25.10	25.63	33.97	35.60
Total, cash expenses	207.33	222.65	104.64	109.61	73.81	77.80	108.64	116.50
Gross value of production less cash expenses	114.65	166.08	37.23	61.30	26.57	82.49	30.27	49.43
Harvest-period price (\$/bu.)	2.78	2.99	2.75	2.70	1.30	2.16	2.53	2.97
Yield (bu.)	115.82	130.01	51.59	63.30	56.05	59.38	53.22	54.45

Appendix table 12b--U.S. feed grains production economic costs and returns, 1995-96

Item	Corn		Grain Sorghum		Oats		Barley	
	1995	1996	1995	1996	1995	1996	1995	1996
Dollars per planted acre								
Gross value of production (excluding direct government payments):								
Primary product	321.98	388.73	141.87	170.91	72.87	128.26	134.65	161.72
Secondary product (straw)	0.00	0.00	0.00	0.00	27.51	32.03	4.26	4.21
Total, gross value of production	321.98	388.73	141.87	170.91	100.38	160.29	138.91	165.93
Economic (full ownership) costs:								
Variable cash expenses	158.13	163.77	77.08	81.85	48.71	52.17	74.67	80.90
General farm overhead	12.46	15.04	9.13	8.88	5.65	5.29	7.98	7.95
Taxes and insurance	20.01	22.70	9.13	9.27	13.88	14.85	13.20	14.27
Capital replacement	32.71	34.95	28.73	31.13	18.58	17.33	28.30	32.17
Operating capital	4.42	4.17	2.16	2.08	0.70	1.22	2.09	2.06
Other nonland capital	13.18	13.35	12.65	12.98	11.43	10.82	14.89	16.09
Land	67.28	85.48	31.81	25.25	26.72	27.83	39.37	42.13
Unpaid labor	25.23	26.78	9.33	9.89	14.30	15.85	6.64	6.99
Total, economic costs	333.42	366.24	180.02	181.33	139.97	145.36	187.14	202.56
Residual returns to management and risk	-11.44	22.49	-38.15	-10.42	-39.60	14.93	-48.23	-36.63
Harvest-period price (\$/bu.)	2.78	2.99	2.75	2.70	1.30	2.16	2.53	2.97
Yield (bu.)	115.82	130.01	51.59	63.30	56.05	59.38	53.22	54.45

1/ Includes technical services and commercial drying. 2/ Cost of purchased irrigation water and baling.



Appendix table 13a--U.S. food grain and sugar crops production cash costs and returns, 1995-96

Item	Wheat		Rice		Sugarbeets		Sugarcane	
	1995	1996	1995	1996	1995	1996	1995	1996
	Dollars per planted acre						\$/harvested acre	
Gross value of production (excluding direct government payments):								
	130.23	146.94	488.66	592.70	748.52	746.61	983.24	979.40
Secondary product (straw and tops)	4.44	5.35	0.00	0.00	0.75	0.71	0.00	0.00
Total, gross value of production	134.67	152.29	488.66	592.70	749.27	747.32	983.24	979.40
Cash expenses:								
Seed	7.57	9.26	19.23	22.38	39.58	41.72	37.79	38.48
Fertilizer, lime, and gypsum	20.89	21.11	54.96	56.10	70.06	70.89	71.18	67.56
Chemicals	5.86	6.23	65.11	67.86	71.21	73.91	66.16	67.70
Custom operations 1/	5.96	5.35	45.15	45.57	40.15	34.71	59.75	61.53
Fuel, lube, and electricity	8.47	9.71	57.42	73.03	39.05	41.64	26.84	29.80
Repairs	12.20	13.26	28.51	28.69	38.72	38.45	95.42	97.01
Hired labor	4.01	4.69	32.52	35.81	99.67	104.52	333.27	323.91
Drying	na	na	28.37	30.14	na	na	na	na
Purchased irrigation water	na	na	11.40	12.03	9.10	9.07	5.57	5.77
Freight & dirt hauling charges	na	na	na	na	13.40	16.01	0.00	0.00
Miscellaneous	0.38	0.40	0.00	0.00	11.53	12.83	7.65	7.16
Hauling allowance (-)	na	na	na	na	6.87	8.57	-8.17	-8.77
Total, variable cash expenses	65.34	70.01	342.67	371.61	425.60	435.18	695.46	690.15
General farm overhead	7.00	5.80	29.91	28.00	38.82	26.30	88.47	82.83
Taxes and insurance	10.08	10.02	29.30	31.88	43.40	36.14	48.56	50.72
Interest	10.94	9.63	26.77	26.42	49.70	35.95	13.39	13.03
Total, fixed cash expenses	28.02	25.45	85.98	86.30	131.92	98.39	150.42	146.58
Total, cash expenses	93.36	95.46	428.65	457.91	557.52	533.57	845.88	836.73
Gross value of production less cash expenses	41.31	56.83	60.01	134.79	191.75	213.75	137.36	142.67
Harvest-period price (\$/bu. wheat, cwt. rice, or net ton sugarbeets and sugarcane) 2/	4.08	4.84	8.77	9.75	38.19	38.19	29.50	29.50
Yield (bu. wheat, cwt. rice, or net ton sugarbeets and sugarcane) 3/	31.92	30.36	55.72	60.79	19.60	19.55	33.33	33.20

Appendix table 13b--U.S. food grain and sugar crops production economic costs and returns, 1995-96

Item	Wheat		Rice		Sugarbeets		Sugarcane	
	1995	1996	1995	1996	1995	1996	1995	1996
	Dollars per planted acre						\$/harvested acre	
Gross value of production (excluding direct government payments):								
Primary product	130.23	146.94	488.66	592.70	748.52	746.61	983.24	979.40
Secondary product (straw and tops)	4.44	5.35	0.00	0.00	0.75	0.71	0.00	0.00
Total, gross value of production	134.67	152.29	488.66	592.70	749.27	747.32	983.24	979.40
Economic (full ownership) costs:								
Variable cash expenses	65.34	70.01	342.67	371.61	425.60	435.18	695.46	690.15
General farm overhead	7.00	5.80	29.91	28.00	38.82	26.30	88.47	82.83
Taxes and insurance	10.08	10.02	29.30	31.88	43.40	36.14	48.56	50.72
Capital replacement	22.81	24.95	58.87	59.25	51.36	51.14	77.25	78.83
Operating capital	1.83	1.78	9.59	9.47	11.90	11.08	19.44	17.56
Other nonland capital	11.95	12.16	21.08	19.98	27.47	25.75	30.89	29.31
Land	42.51	46.40	113.49	125.26	128.22	132.30	155.04	159.95
Return to co-op share	na	na	na	na	25.94	26.24	na	na
Unpaid labor	8.51	9.36	25.26	26.89	45.15	48.15	15.62	15.81
Total, economic costs	170.03	180.48	630.17	672.34	797.86	792.28	1,130.73	1,125.16
Residual returns to management and risk	-35.36	-28.19	-141.51	-79.64	-48.59	-44.96	-147.50	-145.76
Harvest-period price (\$/bu. wheat, cwt. rice, or net ton sugarbeets and sugarcane) 2/	4.08	4.84	8.77	9.75	38.19	38.19	29.50	29.50
Yield (bu. wheat, cwt. rice, or net ton sugarbeets and sugarcane) 3/	31.92	30.36	55.72	60.79	19.60	19.55	33.33	33.20

na = not applicable. 1/ Includes technical services. 2/ 1996 season-average sugar crop prices are not available.

3/ Sugarcane yields are on a per-harvested-acre basis rather than a per-planted-acre basis.

Appendix table 14a--U.S. oilseeds and cotton production cash costs and returns, 1995-96

Item	Soybeans		Peanuts		Cotton	
	1995	1996	1995	1996	1995	1996
Dollars per planted acre						
Gross value of production (excluding direct government payments):						
Primary product	218.54	256.36	620.62	635.14	339.85	383.84
Secondary product (peanut hay and cotton seed)	0.00	0.00	10.35	12.10	48.94	70.73
Total, gross value of production	218.54	256.36	630.97	647.24	388.79	454.57
Cash expenses:						
Seed	13.32	15.01	72.87	74.75	15.67	16.75
Fertilizer, lime, and gypsum	9.76	10.45	43.47	44.12	44.89	46.53
Chemicals	24.82	24.95	97.83	99.71	50.43	50.98
Custom operations 1/	3.65	3.65	8.44	8.70	21.69	20.92
Fuel, lube, and electricity	7.64	9.45	34.84	40.31	38.31	35.67
Repairs	10.68	10.04	27.85	28.62	28.59	29.18
Hired labor	6.01	6.40	31.97	32.86	39.91	41.86
Drying or ginning	na	na	14.95	17.03	53.13	50.84
Other variable cash expenses 2/	0.05	0.05	0.00	0.00	5.79	6.05
Total, variable cash expenses	75.93	80.00	332.22	346.10	298.41	298.78
General farm overhead	11.58	11.44	17.38	12.94	18.20	16.52
Taxes and insurance	18.64	19.71	20.17	17.96	23.33	23.31
Interest	15.02	15.65	44.67	35.47	20.48	19.60
Total, fixed cash expenses	45.24	46.80	82.22	66.37	62.01	59.43
Total, cash expenses	121.17	126.80	414.44	412.47	360.42	358.21
Gross value of production less cash expenses	97.37	129.56	216.53	234.77	28.37	96.36
Harvest-period price (\$/bu. soybeans, lbs. peanuts and cotton)	6.26	6.91	0.29	0.26	0.70	0.65
Yield (bu. soybeans, lbs. peanuts and cotton)	34.91	37.10	2,140.08	2,442.86	485.50	590.53

Appendix table 14b--U.S. oilseeds and cotton production economic costs and returns, 1995-96

Item	Soybeans		Peanuts		Cotton	
	1995	1996	1995	1996	1995	1996
Dollars per planted acre						
Gross value of production: (excluding direct government payments):						
Primary product	218.54	256.36	620.62	635.14	339.85	383.84
Secondary product (peanut hay and cotton seed)	0.00	0.00	10.35	12.10	48.94	70.73
Total, gross value of production	218.54	256.36	630.97	647.24	388.79	454.57
Economic (full ownership) costs:						
Variable cash expenses	75.93	80.00	332.22	346.10	298.41	298.78
General farm overhead	11.58	11.44	17.38	12.94	18.20	16.52
Taxes and insurance	18.64	19.71	20.17	17.96	23.33	23.31
Capital replacement	23.25	21.88	47.62	49.13	54.79	55.93
Operating capital	2.12	2.04	9.29	8.37	8.34	7.60
Other nonland capital	13.62	12.13	28.43	27.7	19.66	20.06
Land	55.30	65.63	52.94	44.67	45.61	47.80
Peanut quota	na	na	93.92	94.89	na	na
Unpaid labor	19.35	20.94	30.64	32.14	33.73	30.58
Total, economic costs	219.79	233.77	632.61	633.90	502.07	500.58
Residual returns to management and risk	-1.25	22.59	-1.64	13.34	-113.28	-46.01
Harvest-period price (\$/bu. soybeans, lbs. peanuts and cotton)	6.26	6.91	0.29	0.26	0.70	0.65
Yield (bu. soybeans, lbs. peanuts and cotton)	34.91	37.10	2,140.08	2,442.86	485.50	590.53

na = not applicable. 1/ Includes technical services. 2/ Cost of purchased irrigation water



Appendix table 15--U.S. flue-cured tobacco production cash costs and returns, 1995-96

Item	1995	1996 1/
Dollars per planted acre		
Gross value of production:	3,467.80	3,951.39
Variable costs:		
Labor 2/	725.12	758.39
Noncash benefits 3/	24.68	25.81
Fertilizer and lime 4/	225.90	229.60
Plant bed materials 5/	46.11	47.77
Chemicals 6/	218.50	226.10
Custom operations	8.15	8.15
Fuel and lubrication 7/	59.86	69.07
Curing fuel and electricity 8/	297.89	343.72
Repairs 9/	142.88	146.71
Warehouse fee	91.90	104.71
No-net-cost & marketing assessment	15.46	21.51
Inspection and grading fee	15.44	17.85
Interest	22.44	22.87
Other 10/	3.81	3.91
Total, variable costs	1,898.14	2,026.17
Machinery and barn ownership costs:		
Capital replacement	320.71	320.94
Return to other nonland capital	103.31	104.22
Taxes and insurance	140.21	134.22
Total ownership costs	564.23	559.38
Other costs:		
General farm overhead	224.52	255.83
Land and quota charge 11/	799.19	897.88
Total excluding land and quota	2,686.89	2841.38

Yield (lbs./ acre) 1,933 2,151

1/ Preliminary 2/ Includes operator, family, exchange, and hired labor valued at prevailing hired wage rates. 3/ Includes rental values of housing, personal property, utilities, drinks, snacks, and field toilets. 4/ Includes custom costs if they could not be separated. 5/ Includes plant bed seed, fertilizer, pesticides, fumigants, and purchased plants. 6/ Includes insecticides, herbicides, fungicides, pesticides, and growth regulators. Also includes custom costs if they could not be separated. 7/ Includes tractors, machinery and irrigation fuel, and lubrication. 8/ Includes cost of LP gas, fuel oil, or diesel, and electricity used to cure tobacco. 9/ Includes machinery, equipment, irrigation, and barn repairs. 10/ Includes cover crop seed, sticks, and twine. 11/ Weighted average of cash and share rents.

Appendix table 16a--U.S. burley tobacco production cash costs and returns, 1995-96

Item	1995	1996
\$/planted acre		
Gross value of production	3,371.00	3,847.53
Total, gross value of production	3,371.00	3,847.53
Cash expenses:		
Seed and Plant bed	104.65	103.80
Fertilizer	279.68	305.84
Chemicals	94.54	97.83
Custom operations	10.82	12.90
Fuel, lube, and electricity	63.57	73.35
Repairs	68.57	70.41
Hired labor	398.99	421.80
Marketing expenses	210.41	238.67
Other variable cash expenses	17.31	18.74
Total, variable cash expenses	1,248.54	1,343.34
General farm overhead	206.42	163.48
Taxes and insurance	45.21	40.13
Interest	77.24	64.50
Total, fixed cash expenses	328.87	268.11
Total, cash expenses	1,577.41	1,611.45
Gross value of production less cash expenses	1,793.59	2,236.08

Appendix table 16b--U.S. burley tobacco production economic costs and returns, 1995-96

Item	1995	1996
\$/planted acre		
Gross value of production (excluding direct government payments):		
Cotton	3,371.00	3,847.53
Total, gross value of production	3,371.00	3,847.53
Economic (full ownership) costs:		
Variable cash expenses	1,248.54	1,343.34
General farm overhead	206.42	163.48
Taxes and insurance	45.21	40.13
Capital replacement	97.91	91.07
Operating capital	34.16	34.19
Other nonland capital	118.29	104.28
Land and Quota	955.33	1,008.22
Unpaid labor	553.55	585.19
Total, economic (full ownership) costs	3,259.41	3,369.90
Residual returns to management and risk	111.59	477.63
Harvest-period price (dollars/lb.)	1.845	1.920
Yield (lb./planted acre)	1,827.100	2,003.920

Appendix table 17a--U.S. cow-calf production cash costs and returns, 1995-96

Item	1995	1996
	\$/bred cow	
Gross value of production:		
Steer calves	44.94	35.35
Heifer calves	37.8	29.56
Yearling steers	105.94	97.17
Yearling heifers	58.35	53.88
Other cattle	84.89	71.46
Total, gross value of production	331.92	287.42
Cash expenses:		
Feeder cattle	11.67	10.58
Feed--		
Grain	9.76	8.98
Protein supplements	24.03	29.21
By-products	7.69	8.02
Harvested forages	80.87	86.74
Pasture	73.86	79.22
Total feed costs	196.21	212.17
Other--		
Veterinary and medicine	18.23	17.55
Livestock hauling	4.32	4.18
Marketing	4.3	4.16
Custom feed mixing	0.22	0.21
Fuel, lube	19.11	23
Machinery and building repairs	31.06	31.83
Hired labor	30.91	31.65
Other variable cash expenses	5.79	5.95
Total, variable cash expenses	321.82	341.28
General farm overhead	38.56	36.15
Taxes and insurance	15.96	17.27
Interest	34.31	33.99
Total, fixed cash expenses	88.83	87.41
Total, cash expenses	410.65	428.69
Gross value of production less cash expenses	-78.73	-141.27

Appendix table 17b--U.S. cow-calf production economic costs and returns, 1995-96

Item	1995	1996
	\$/bred cow	
Gross value of production:	331.92	287.42
Economic (full ownership) costs:		
Variable cash expenses	321.82	341.28
General farm overhead	38.56	36.15
Taxes and insurance	15.96	17.27
Capital replacement	84.89	83.59
Operating capital	13.49	13.03
Other nonland capital	37.59	37.31
Land	0.04	0.05
Unpaid labor	92.42	96.62
Total, economic costs	604.77	625.3
Residual returns to management and risk	-272.85	-337.88

Appendix table 18a--U.S. milk production cash costs and returns, 1995-96

Item	1995	1996
	\$/cwt	
Gross value of production:		
Milk	12.80	14.78
Cattle	0.87	0.78
Other income 1/	0.60	0.61
Total, gross value of production	14.27	16.17
Cash expenses:		
Feed--		
Concentrates	3.51	4.09
By-products	0.21	0.21
Liquid whey	0.12	0.13
Hay	1.45	1.60
Silage	1.25	1.37
Pasture and other forage	0.12	0.13
Total feed costs	6.66	7.53
Other--		
Hauling	0.46	0.44
Artificial insemination	0.15	0.14
Veterinary and medicine	0.38	0.36
Bedding and litter	0.24	0.23
Marketing	0.38	0.36
Custom services and supplies	0.43	0.42
Fuel, lube, and electricity	0.49	0.53
Machinery and building repairs	0.78	0.76
Hired labor	0.64	0.62
DHIA fees	0.08	0.07
Dairy assessment	0.16	0.03
Total, variable cash expenses	10.85	11.49
General farm overhead	0.54	0.53
Taxes and insurance	0.29	0.33
Interest	0.83	0.85
Total, fixed cash expenses	1.66	1.71
Total, cash expenses	12.51	13.20
Gross value of production less cash expenses	1.76	2.97

Appendix table 18b--U.S. milk production economic costs and returns, 1995-96

Item	1995	1996
	\$/cwt	
Gross value of production:	14.27	16.17
Economic (full ownership) costs:		
Variable cash expenses	10.85	11.49
General farm overhead	0.54	0.53
Taxes and insurance	0.29	0.33
Capital replacement	2.07	2.01
Operating capital	0.10	0.1
Other nonland capital	0.94	0.87
Land	0.01	0.00
Unpaid labor	1.85	1.80
Total, economic costs	16.65	17.13
Residual returns to management and risk	-2.38	-0.96

1/ Includes the dairy's share of receipts from cooperative patronage dividends, assessment refunds, renting or leasing of dairy animals, the estimated value of manure as a fertilizer, and insurance indemnity payments.



Appendix table 19a--U.S. hog production cash costs and returns, 1995-96

Item	All hogs		Farrow to finish		Farrow to feeder pig		Feeder pig to finish	
	1995	1996	1995	1996	1995	1996	1995	1996
Dollars per hundredweight gain 1/								
Gross value of production:								
Market hogs	38.45	48.87	39.76	50.37	0.92	1.16	52.82	66.89
Feeder pigs	4.57	5.17	0.41	0.46	62.08	72.12	0.05	0.05
Cull stock	2.22	3.02	2.06	2.83	5.32	7.24	0.02	0.03
Breeding stock	2.01	2.63	0.17	0.24	0.11	0.15	0.01	0.01
Inventory change	-0.2	-0.84	-0.26	-0.95	0.02	-0.48	0.18	-0.46
Other income 2/	1.32	1.31	1.38	1.38	1.43	1.45	1.06	1.05
Total, gross value of production	48.37	60.16	43.52	54.33	69.88	81.64	54.14	67.57
Cash expenses:								
Feed--								
Grain	12.28	17.25	12.85	18.14	14.19	19.86	9.66	13.37
Protein sources	7.96	10.48	8.68	11.48	8.33	10.75	4.65	6.11
Complete mixes	5.83	7.08	4.19	5.12	15.19	19.26	8.33	9.89
Other feed items 3/	0.56	0.67	0.54	0.64	0.68	0.81	0.32	0.39
Total feed costs	26.63	35.48	26.26	35.38	38.39	50.68	22.96	29.76
Other--								
Feeder pigs	3.31	3.81	0.13	0.15	0.03	0.04	17.71	20.11
Veterinary and medicine	1.41	1.41	1.22	1.25	4.89	4.78	0.75	0.73
Bedding and litter	0.08	0.08	0.06	0.06	0.2	0.21	0.11	0.11
Marketing	0.59	0.59	0.47	0.48	2.76	2.85	0.44	0.44
Custom services and supplies	0.5	0.51	0.42	0.43	1.47	1.57	0.4	0.42
Fuel, lube, and electricity	1.58	1.83	1.5	1.75	4.67	5.38	0.76	0.86
Repairs	1.4	1.41	1.38	1.4	2.9	2.9	0.9	0.9
Hired labor	2.55	2.74	2.29	2.52	7.44	7.89	0.79	0.88
Total, variable cash expenses	38.05	47.86	33.73	43.42	62.75	76.30	44.82	54.21
General farm overhead	1.91	1.59	1.7	1.41	3.44	2.94	1.6	1.32
Taxes and insurance	1.06	1.03	0.96	0.94	2.21	2.2	1.02	0.99
Interest	3	2.65	2.68	2.38	5.91	5.38	3.12	2.75
Total, fixed cash expenses	5.97	5.27	5.34	4.73	11.56	10.52	5.74	5.06
Total, cash expenses	44.02	53.13	39.07	48.15	74.31	86.82	50.56	59.27
Gross value of production less cash expenses	4.35	7.03	4.45	6.18	-4.43	-5.18	3.58	8.30

Appendix table 19b--U.S. hog production economic costs and returns, 1995-96

Item	All hogs		Farrow to finish		Farrow to feeder pig		Feeder pig to finish	
	1995	1996	1995	1996	1995	1996	1995	1996
Dollars per hundredweight gain 1/								
Gross value of production:								
Market hogs	38.45	48.87	39.76	50.37	0.92	1.16	52.82	66.89
Feeder pigs	4.57	5.17	0.41	0.46	62.08	72.12	0.05	0.05
Cull stock	2.22	3.02	2.06	2.83	5.32	7.24	0.02	0.03
Breeding stock	2.01	2.63	0.17	0.24	0.11	0.15	0.01	0.01
Inventory change	-0.20	-0.84	-0.26	-0.95	0.02	-0.48	0.18	-0.46
Other income 2/	1.32	1.31	1.38	1.38	1.43	1.45	1.06	1.05
Total, gross value of production	48.37	60.16	43.52	54.33	69.88	81.64	54.14	67.57
Economic (full ownership) costs:								
Variable cash expenses	38.05	47.86	33.73	43.42	62.75	76.30	44.82	54.21
General farm overhead	1.91	1.59	1.70	1.41	3.44	2.94	1.60	1.32
Taxes and insurance	1.06	1.03	0.96	0.94	2.21	2.20	1.02	0.99
Capital replacement	11.26	11.76	10.95	11.37	25.13	27.25	7.68	8
Operating capital	1.06	1.22	0.94	1.11	1.75	1.94	1.25	1.38
Other nonland capital	4.09	4.07	3.98	3.94	8.46	8.7	3	3
Land	0.21	0.22	0.22	0.23	0.44	0.48	0.1	0.1
Unpaid labor	4.93	5.17	4.75	4.97	10.48	11.38	4.18	4.36
Total, economic (full-ownership) costs	62.57	72.92	57.23	67.39	114.66	131.19	63.65	73.36
Residual returns to management and risk	-14.20	-12.76	-13.71	-13.06	-44.78	-49.55	-9.51	-5.79

1/ Cwt gain = (cwt sold - cwt purchased) + cwt inventory change. 2/ Value of manure production. 3/ Milk replacer, milk, milk by-products, antibiotics, and other medicated additives.





# SUMMARY OF REPORT

U.S. Department of Agriculture ♦ Economic Research Service

## Farm Sector Financially Strong in 1995, Despite Drop in Farm Income

October 1997, ECI-1996

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**T**he farm sector remained financially strong in 1995, even though farm sector income was lower than in 1994, according to *Farm Business Economics Report, 1995*, a new report from USDA's Economic Research Service. This report provides data and commentary on the income and finances of the farm sector at the national and State level, and estimates of production costs for major field crops, livestock, and dairy.

The value the farm sector added to the U.S. economy in 1995 (the latest year for which data are available) declined \$12.5 billion from that of 1994. Net value added (the accounting concept used internationally) represents the addition to the national economic product from the farm sector's output of goods and services, less payments to nonfarm sectors of the economy. It also represents the sum of economic returns to all the contributors to farm production—that is, farm employees, lenders, landlords, and farm operators. The share received by farm operators separately is measured by net farm income. Final agricultural sector output, the value of the agricultural sector's output of commodities and services before expenses, fell \$4.8 billion in 1995. Lower output, combined with a \$6.4 billion increase in expenses paid to other sectors, accounted for most of the fall in net value added. The value of final crop output declined \$4.7 billion, as a year-long rise in 1995 crop prices was not enough to offset the retreat from 1994's record production. The final value of livestock output also fell nearly \$2 billion between 1994 and 1995.

Net farm income was \$13.6 billion lower in 1995 than in 1994. Despite lower production levels for most major crops, the value of all farm marketings rose by \$5 billion in 1995. The total value of 1995 crop sales rose almost \$6.3 billion from the 1994 level. Much of the higher crop sales value was made possible by crops produced in 1994's bumper harvest and sold from inventory during calendar year 1995 at rising prices. Consequently, a \$3.9 billion reduction in the value of crop inventories offset a significant share of 1995's additional crop sales. A \$1.3 billion decline in livestock receipts also partially offset the increased value of crop sales. Beef prices were lower in each month of 1995 than in 1994. Production expenses, particularly feed, fertilizer, interest, and labor costs, in 1995 rose \$8.1 billion. Net cash income, which measures cash sales and expenses for the accounting year, fell \$1.7 billion.

Both net farm income and net cash income were the lowest measured in the 1990's.

Direct government payments were slightly less in 1995 than in 1994, falling to their lowest level since 1982. Beginning in 1996, farm programs will change markedly with implementation of the 1996 Farm Act.

Financial conditions in the farm sector remained strong in 1995, even though farm sector income was lower and farm debt was somewhat higher than in 1994. Farm debt reached its highest level since 1986, but farm equity rose in 1995 as gains in asset values outpaced the increase in debt. Growing farm assets came close to a trillion dollars, and although debt increased to \$151 billion, equity pushed upward to \$827 billion. Farm equity (in nominal dollars) has increased steadily since 1990 as asset values have risen faster than farm debt. Various measures of the farm debt burden indicate that the current increase, while a matter of concern, is not threatening to the sector's financial condition.

Costs and returns estimates show that higher 1995 prices led to higher returns for corn, wheat, and rice, despite lower yields and higher expenses. Acreage planted to major crops in 1995 declined from the 1994 level, with the exception of durum wheat, soybeans, and cotton. Total U.S. planted acreage declined 1.7 percent. Crop prices received by farmers in 1995 rose an average of 6.7 percent, but average livestock prices declined 3.2 percent.

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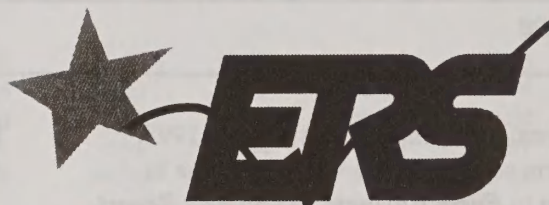
The information presented here is summarized from *Farm Business Economics Report, 1995*, ECI-1996, by the Rural Economy Division.

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**Moving?** To change your address, send this sheet with label intact, showing new address to ERS Customer Service, Rm. 3098, 1800 M Street, N.W., Washington, D.C. 20036 -5831.